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Hemorrhage and Shock in Obstetrics

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An analysis of the maternal mortality statistics in the State of Oklahoma reveals that 34 per cent died as a result of hemorrhage and shock .(See Fig. 1). This is not the complete picture however, since an additional 21 per cent die following abortion, and one-half of all abortion deaths are due to hemorrhage.

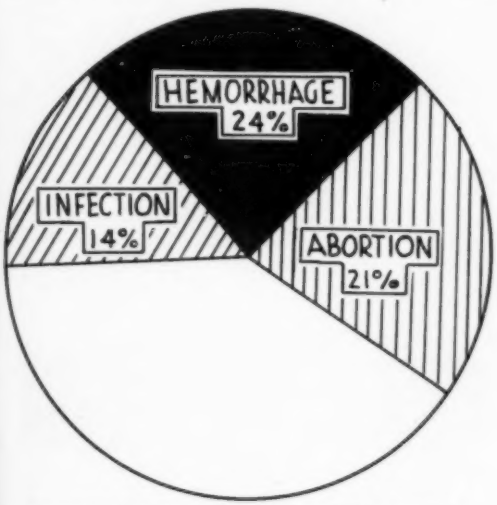

Figure 1 Oklahoma statistics on maternity mortality

Pastore and others have shown a remarkable parallel between the degree of blood loss and the frequency of infection which follows later in the puerperium. They were able to predict, with considerable accuracy, the patient who later was to become infected, by carefully measuring the amount of blood loss sustained at delivery. Since one-half of the 21 per cent of abortion deaths die from infection, the conclusion is inescapable that foregoing hemorrhage in many of these cases had set the stage for the lethal infection.

An additional 14 per cent of maternal deaths (excluding abortion deaths) occurred as a result of puerperal infection, which again, no doubt, was influenced by blood loss. (See Fig. 2). Thus, we see that blood loss, shock, or the combination, is known to account for at least 34 per cent of maternal deaths in this State, and almost certainly is the secondary cause of many additional deaths from infection.

Figure 2 Corrected to show true role of hemorrhage

To the minds of most doctors who attend childbirth, a death from hemorrhage is en-

visoned as a sudden, spectacular, overwhelming, and terrifying gush of blood coming from the vagina, without previous warning, causing the death of the patient in the space of ten or fifteen minutes. We usually think of this type of hemorrhage as being associated with placenta previa, or post partum bleeding. While such deaths do occur, in circumstances as sudden and catastrophic as indicated, they are relatively rare. If these were the *only* women dying of hemorrhage, the death rate from blood loss would be negligible.

A fact which should be emblazoned in the mind of every obstetrician, is that on the average, the length of time elapsing between the first recognized hemorrhagic tendency and the death of the patient is at least seven hours. If only we realized that we had seven hours in which to control a hemorrhage, we could transport a patient from anywhere in Oklahoma to almost any other location in Oklahoma. Seven hours is time enough to collect and sterilize any equipment we might need. Seven hours is sufficient time to round up and cross-match any number of donors. Consultation or skilled assistance is available to any Oklahoma physician no matter where he practices, in less than seven hours.

Prevention of death from hemorrhage, can be simplified into three phases. First, teach the patient to report any abnormality which might predict excessive blood loss. Second, "take alarm early." Third, take prompt and efficient action. The action taken depends of course on the type of bleding, the gestational state of the patient, and modifying circumstances.

We must realize the danger inherent in a long continued, even though small or moderate, rate of blood loss. Everyone takes alarm at the hemorrhage which gushes forth, but all too seldom do we give proper attention to the slow, steady flow, or to the large amount of blood absorbed in sponges and packs.

In order to prevent these deaths from hemorrhage, it is necessary to understand some of the fundamental factors involved. These may be listed as:

a. Circulatory changes in the maternal organism.
b. Physiological factors associated with hemorrhage.
c. Hemorrhagic Shock.
d. Therapeutic measures to combat hemorrhage and shock.

CIRCULATORY CHANGES IN THE MATERNAL ORGANISM

As gestation continues, the pelvic veins enlarge remarkably, as do also the veins and arteries of the uterus. Toward the end of pregnancy, the placental sinuses are filled with blood, all of these changes necessitating an increased bulk of blood. Part of this increased bulk is supplied by contraction of the spleen, which in pregnancy is usually smaller than normal. The rest of the increase is made up by the production of more blood. This amounts to about a 25 per cent increase, due largely to an increase in the plasma content. Thus, the volume is made larger by the addition of the "cell-less elements." The blood itself shows further changes, in that there is about a 30 per cent increase in the fibrinogen content and an increase in the viscosity.

The heart rate is not much increased in normal pregnancy, but the minute volume is greatly increased. In the last months, this increase may amount to 35 per cent or 50 per cent. This enormously increases the strain on the maternal heart, but allows up to two times the blood output, without increase in the cardiac rate.

Eight per cent of the body weight is made up of blood. This amounts to approximately 40 cc. per pound of body weight, and for a 150 pound woman, the total quantity of blood would be approximately 6,000 cc. or about six quarts of blood. (See Fig. 3). Physiologists

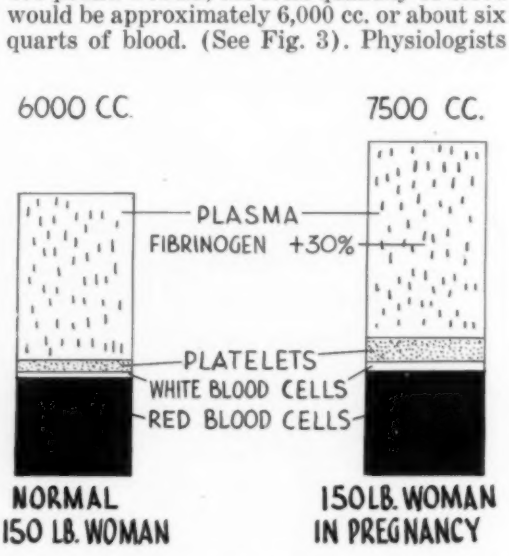

Figure 3 Comparison of normal and pregnancy blood volumes

are agreed that a loss of 30 per cent blood volume in the space of a few hours causes a drain on the system which probably cannot be met by the natural methods of compensation. Unless additional aid is provided, death from hemorrhage will ensue. Thirty per cent of 6,000 cc. is 1800 cc. of blood. Obstetricians almost never *measure* blood loss and are accustomed to seeing considerable blood after a normal delivery. We would be startled to find how close to this possibly fatal limit the blood loss approaches in many of our cases.

Nature has wisely provided several mechanisms by which the pregnant patient is better equipped to meet sudden blood loss. There occurs in normal pregnancy in the latter months, a constant seepage of "blood," (the fluid element) out of the capillaries and into the cells. This is not the pitting edema commonly seen, although if carried to extremes such edema would result. Instead, it is a somewhat water-logged condition of individual cells. While this mass of fluid might be unfavorable to the patient exhibiting toxemia, it is nevertheless a safety factor in blood loss, since fluid replacement can begin almost immediately back into the blood stream from this vast storehouse. We may call this the "extra-capillary reserve." Another factor concerns the increased excitability of the muscular coats of the arteries, permitting them to clamp down more vigorously than usual. This, also, may have implications of harm in toxemias. Other factors operating to minimize blood loss in labor would include the slight temperature rise, the concentration of blood elements from fluid loss, the slight increase in acidity, and the increased level of adrenalin during the emotions of labor. While some of these factors may be a detriment to the patient's welfare in other ways, they are at least changes affording quicker blood clotting during labor and after delivery.

PHYSIOLOGICAL FACTORS ASSOCIATED WITH HEMORRHAGE

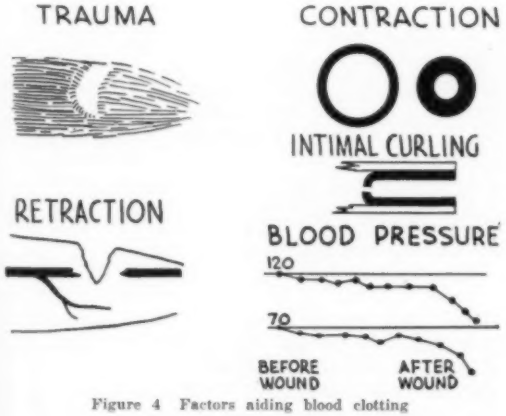

Figure 4 Factors aiding blood clotting

(SEE FIG. 4)

Blood Clotting

Clotting may be hastened by several factors in addition to the natural coagulation of blood. These factors include: trauma to the tissues, releasing the mechanism which precipitates the clotting; contraction of the muscular coat of the artery itself, thereby narrowing its lumen; curling inward of the intimal layer of the artery; a fall in blood pressure after a certain degree of hemorrhage has occurred; and retraction of the severed artery so that it lies underneath a layer of muscle or fascia. The fall in blood pressure will be discussed at some length later. All of these factors combined may be sufficient to stop profound hemorrhage even from an artery as large as the popliteal.

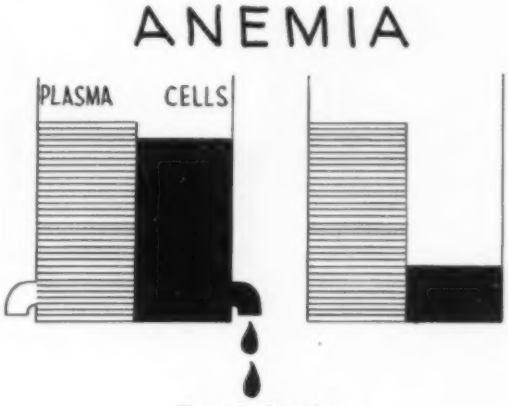

Figure 5 Anaemia

Because we use the red cell count, or the level of the hemoglobin, as an index to diagnosis or therapy on so many occasions, we are apt to think that these elements of blood are the most important constituents. The fluid and colorless portion of the blood is usually far more important than the number of red cells or hemoglobin level. The body can withstand a loss of red blood cells easier than it can withstand the loss of an equal volume of plasma or serum. (Many pernicious anemia patients are comfortable with a red cell count not over 1,000,000 per cubic millimeter if kept in bed.)

Anemia and Hemorrhage

(See Fig. 5)

Anemia represents the loss of red cellular elements of the blood, and progressive anemia may be noted by observing the hemoglobin level in the blood. It is unfortunate that we think of hemorrhage in the same way. (See Fig. 6). Sudden hemorrhage represents a loss of *both* cellular and blood elements, and until fluid replacement and other reparative measures have begun to operate, the hemoglobin is unchanged from its original level. The patient may bleed to death, but the last drop of blood lost might be just as rich as the first. It is discouraging to note how many physi-

cians still rely on the hemoglobin level, or the red blood cell count to warn them of the

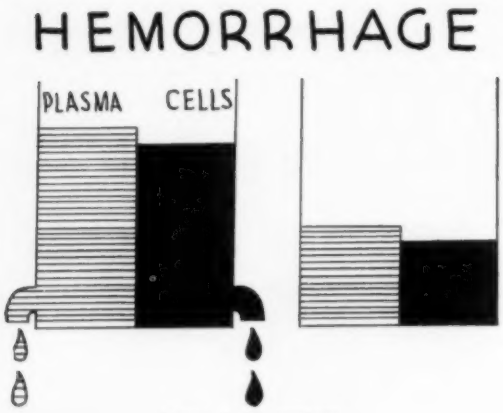

Figure 6 Hemorrhage

degree of their patient's blood loss. These same laboratory aids, taken two days later, would be more nearly accurate.

(See Fig. 7).

The mechanism by which the body is able to maintain the approximate volume of circulating blood at all times is extremely complex. This mechanism not only attempts to keep in relative balance the amounts of fluid versus cells, but at the same time it provides for the nourishment of tissue cells and for the disposal of waste products which are manufactured by those cells. Fluid may be supplied artificially to the body through several avenues, such as the subcutaneous, intravenous, and proctoclysis routes in addi-

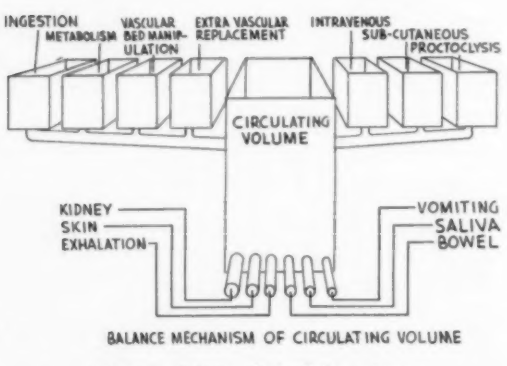

Figure 7 Balance of circulating volume

tion to which there are four natural sources of fluid intake. The first of these natural sources is through ingested fluids. Secondly, in the process of digestion of the food elements, protein and carbohydrates, an amount of water nearly equal to that of food, is produced in the metabolism. A third method which is constantly being utilized by the normal patient concerns a rearrangement of the huge vascular bed including the rearrangement of capillary spaces. The central nervous system automatically and almost instantly may divert blood from some unimportant organ such as the skin, to protect an important or vital organ. In pregnancy, this system may not work too well, and leg cramps, numbness of the extremities, fainting or nausea and vomiting are all too common. The patient is said to have an "unstable vasomotor system." The fourth method of replacement is by means of seepage from the huge volume of tissue spaces, back into the vascular stream. In this manner, considerable replacement can take place utilizing the fluid and lymph contained in the lymph spaces.

Fluid is constantly being eliminated by the body through several channels, any one of which may be forced to accelerate its capacity for fluid disposal. The most active mechanism of elimination is through the kidney. The second most active moisture loss occurs through the skin. A third source of moisture loss in the expired lung air. Another constant source of fluid loss occurs by means of the moisture present in defecated material. The loss of fluid by saliva is negligible under usual circumstances, but in ptyalism, spitting habit, or mouth breathing, may become important. The fluid and body juices lost by vomiting represent a serious loss to the body since they are rich in chemical necessities as well as water, which makes it extremely important to guard the food and fluid intake of the vomiting patient. Fortunately, however, vomiting is an uncommon and intermittent process.

The effects of hemorrhage are modified by external circumstances, such as; the original blood volume and cell count before hemorrhage, the youth or senescence of the vascular walls, especially to surrounding vital centers, and more particularly by the rate/volume of blood loss. The results may be divided into immediate and remote.

EARLY DEFENSE AGAINST HEMORRHAGE

a. The loss of a considerable amount of blood (See Fig. 8) sets in motion a train of defense reactions calculated to allow the subject to continue life. The first and most easily discernible has to do with the clotting of the blood. This one property is the most important single phenomenon connected with hemorrhage, and were it not for this, a trivial wound would result in death.

b. Increase in the speed of circulation, which may or *may not* be accompanied by a rising pulse rate. The increased speed of circulation expresses an effort on the part of the

body to deliver as much blood as formerly to the vital centers despite a minimized circulating volume.

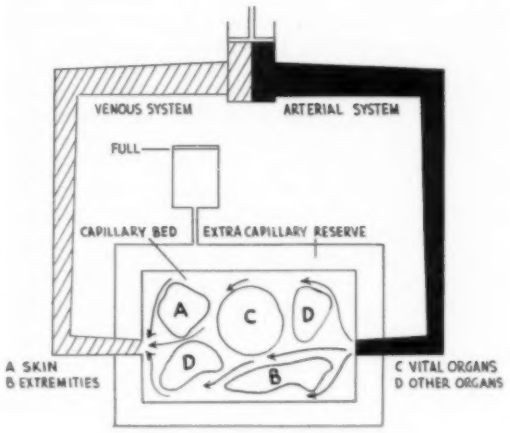

Figure 8 Normal vascular system

c. Contraction of the spleen. It is now thought that the reduced blood volume is met, at least in part, in obstetrical cases, by contraction of the spleen, with the subsequent discharge into the circulation of a quantity of fluid which is more than usually rich in blood cells.

d. Increased respiration. With a decreased amount of circulating volume there is a beginning disparity between the oxygen need and the oxygen supply. This is met by increasing the depth of respirations, which in severe cases are sighing or gasping and which may occasionally resemble the Cheyne-Stokes type.

e. Restlessness. The anxiety phase of hemorrhage is a constant finding in the later stages and one which seems an anachronism to continued existence. It is doubtless the result of insufficient blood supply to cortical centers.

f. Rearrangement of blood disposition. This phenomenon is extremely important, ordinarily allowing marked adjustment to the demands of hemorrhage. Depending on vasomotor phenomena, it will be less prompt in a sclerotic arterial system, and less dependable if there is additional injury or narcosis from anaesthesia, toxemias, drugs, etc. To effect this arrangement, the arterioles which serve relatively unimportant organs, are contracted. The skin, mucous membranes, intestines, etc., are deprived of circulation, becoming cold and pallid. This vasoconstriction is accomplished by stimulation of the sympathetic nervous system, and by these means, life can continue with certain unimportant functions rendered dormant. The sympathetic nervous system, is its vigorous attempts to constrict the vascular bed, stimulates the secretory system of the skin, with resultant sweat production and clamminess. Sufficient constriction may actually *raise* the blood pressure at this point. Thus, we note that the fall in blood pressure which we see all too often in hemorrhage, represents a failure of the compensatory mechanisms to keep up with the loss of blood. It is a late and dangerous sign, and should always cause the physician to act at once to combat the blood loss. The second part of the mechanism will be mentioned as a delayed effect, although it probably begins early in the course of hemorrhage.

Delayed Effects

a. Replacement of lost fluid. This is mentioned as a late finding, mainly because it make take several hours for completion. As soon as blood volume is decreased from hemorrhage, there is a beginning transfer of fluid from the lymph spaces around the cells, through the capillary membranes, back into the closed vascular system. The immediate effect of this is to deprive the tissues of their usual moisture, thus explaining the early, constant, and pronounced symptom of thirst, which is the universal cry of the wounded.

b. Replacement of red and white cells. This is the final item of repair and taken from a few days to several weks, depending on the individual.

HEMORRHAGIC SHOCK

The term "shock" first appeared in the literature about 1795. Since then despite many attempts and much research, no definition entirely satisfactory has been proposed, mainly because there are several different types of shock, respective to several different inciting causes.

Shock may follow:

1. Mechanical trauma: operative, accidental, or intestinal.
2. Thermal trauma: burns, freezing, peritoneal cooling.
3. Hemorrhage: internal, external and into tissues.
4. Pain.
5. Asphyxia: constrictive, narcotic, anesthetic.
6. Miscellaneous: infection, eclampsia, peritonitis, etc.

This discussion is limited to hemorrhagic shock.

One constant physical fact common to all types of shock regardless of the inciting cause, is the loss, temporary or permanent, of circulating volume within the closed vascular system. When this loss is sudden, the shock is apt to be sudden and severe. When the loss is gradual, the state of shock begins imperceptibly, and all too often catches us therapeutically off guard.

Beginning with a loss of circulating volume, (See Fig. 9) there is a reduction in cardiac filling, and therefore, a reduction in

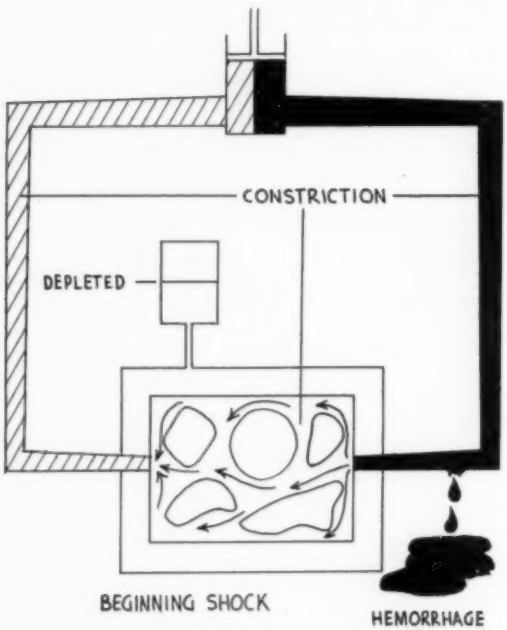

Figure 9 Beginning hemorrhagic shock

cardiac output. The pulse rate generally begins to increase at this point, but it may remain steady, or even *slow* somewhat. Thus, pulse rate is not a dependable sign of impending or early shock. If the blood loss has been sudden there will be little or no changes in the hemoglobin or hemotocrit reading, (as before noted — Refer to Fig. 6), and these tests are equally unreliable.

With the reduced cardiac output, the sympathetic nervous system goes into vigorous action. The blood is shunted away from unimportant organs, such as the skin, mucous membranes, extremities, viscera, etc., thus conserving the blood to bathe the vital centers. The muscular activity is decidedly curtailed, and with the skin and extremities oligemic, the radiation of heat is curtailed and conserved. The patient is lethargic, and cold.

At this point, the sympathetics cause a constriction of the arteries and veins, thereby lessening the blood spaces which need to be filled. Also, the volume of the capillary bed is reduced by constriction. This entire mechanism is an exceedingly valuable one, and as a result of arterial constriction, the blood pressure remains relatively level, or even rises. Thus, we see the fallacy of trying to diagnose early shock, or to judge the degree of shock, by observing the blood pressure. The intense activity of the sympathetics carries over to activation of the sweat glands, and the patient is cold and clammy.

Not until after approximately 20 per cent of the total circulating blood volume has been lost does this mechanism of defense begin to fail. It is only here, in well advanced shock when the arterial, venous, and capillary bed can constrict no more, that the blood pressure begins to fall. Remember then, *any* patient so far advanced in shock as to have a failing blood pressure, needs at least 1,000 cc. of fluid replacement and often much more. And promptly. Furthermore, *do not be fooled* by the fact that the fluid replaced has brought the blood pressure up, e.g., 90/60. That is only because the patient's body is using every mechanism of defense. Too many tragedies have followed complacency at this point. *Replace until the blood pressure is normal, the pulse is normal, and the skin no longer cold and clammy.* One thousand cc. is just a start all too often. For permanent benefit these fluids must contain colloids. Patients have been drowned in glucose or saline solution, trying to combat shock.

Another practical point concerns the use of stimulants and adrenalin. The patient is already making a last ditch stand, and adrenalin or other stimulants are useless or worse, causing certain organs to work (metabolism) which the body has purposely rendered dormant for conservation purposes.

Should the fluid be incompletely replaced (See Fig. 10) or not at all, the progressive

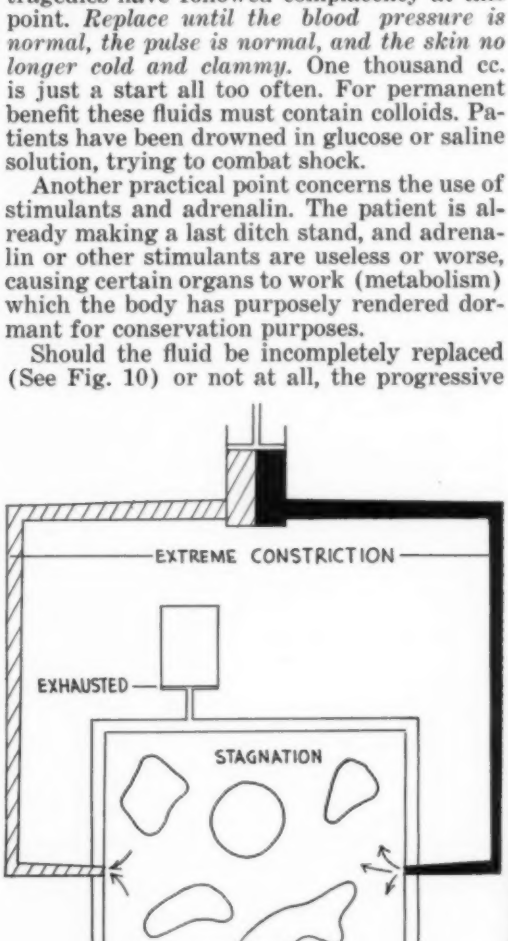

Figure 10 Terminal shock

fall in blood pressure, circulating volume, and cardiac filling would result in a definite lack of oxygen in the tissues. This is the terribly dangerous "shock pitch," for with

anoxia, the vital centers in the brain and spinal cord, adrenals, etc., begin to fail, and the capillary bed begins to dilate and stagnate. This is the beginning of the end. While morphine may minimize pain which in turn causes some types of shock, morphine is worse than useless at this point because it adds to the oxygen lack.

Oxygen is now used in nearly every severe case of pneumonia. Belatedly, we are learning to use it early in eclampsia. When will we learn to use it early in shock? We would, if the patient were cyanotic, but there is little cyanosis because there is so little blood going through the skin. Any anaesthetic should long ago have been discontinued, because of the additional anoxia. By this time an anesthetic is superfluous.

Further progression of the shock causes under activity of the adrenal cortex, failure of renal and hepatic function, and a general break down of all metabolism. Potent adrenal extracts may in the future save these patients but they are not yet available.

There are then, briefly, three stages of hemorrhagic shock. In the earliest stage, the fluid loss may be compensated by simple measures such as cessation of further fluid loss, hot coffee, warm blankets, body rest, relief of pain, and simple stimulants. The second stage demands more vigorous therapy, and recovery will not occur unless the circulating volume is replaced by intravenous fluid. At this point, as mentioned above, conservation of every defense measure. The third stage is the break down of defense and unless vigorously and correctly treated soon reaches an irreversible stage beyond which no amount of any known therapy will save the patient.

These three stages may pass from one to the other rapidly and imperceptibly or worse yet the wonderful system of defense may lull us in to fancied security. The hemoglobin blood pressure and red cell count are useless or actually misleading. The over all clinical picture is the only safe criterion.

THERAPY

Beyond all doubt, the best therapeutic agent in hemorrhagic shock is the replacement of whole blood, carefully cross-matched and with compatible Rh factors. Because, however, we seldom take over 500 cc. from one donor, all too often we think 500 cc. is sufficient for the patient. If in clinical shock she should certainly have 1,000 cc. and all too often twice that or more.

Unfortunately, even in well equipped hospitals, the shortest time that is necessary to type and match and collect donors blood may be over two hours. Too often, especially in rural practice, whole blood is simply not available.

A very effective substitute is available, in amost every drug store in almost every town, and it should be in every physician's automobile. The dried plasma commercially available is a precious life saver, if used early and adequately. The quantity used however, should be as great or greater than whole blood. It has the decided advantages of availability, stability, and will not spoil from time or heat. It need not be warmed, matched, typed, tested for Rh or syphilis. There is only rare anaphylaxis.

Glucose or saline are the next most valuable, and often keep the patient alive until plasma or whole blood is available. While these crystalized solutions cannot be given in huge quantities without caution (in cases of low serum protein) nevertheless, *any* fluid is better than *no* fluid. The use of atrophine, adrenal cortex, metrazol, etc., are beyond the scope of this essay.

TREATMENT OF GRAVE EMERGENCIES

Even though the patient may be near death from blood loss, many lives can be saved by prompt and efficient action. More than one pair of hands are needed and the more trained help available the better.

1. Lower the head. This conserves the blood supply to vital centers and facilitates venous return and cardiac filling.

2. Insulate from chilling with a blanket.

3. Supply oxygen if possible and artificial resuscitation if necessary.

4. As rapidly as possible replace the intravenous fluid. In a grave emergency the veins are usually collapsed making it difficult to puncture them with a large needle and even if punctured, the fluid may run so slowly that the patient dies under treatment. This is particularly true of blood or plasma. Do not hesitate to cut down on a vein and the best vein for rapid therapy runs just anterior to the internal mallelous. A longitudinal incision about two inches in length extending through the skin and subcutaneous fat will expose the vein. It should be elevated by passing a probe or hemostat underneath. Cut across the vein or insert without cutting, the largest available needle and secure the needle in the vein with the needle and vein grasped in a hemostat or by tieing in place with a suture. For this reason a canula is better than a needle. It is advisable and often imperative that the fluids be administered by positive pressure, and one of the best methods is by means of large syringes. Have an assistant fill one syringe while the operator pumps blood or plasma with the second syringe. A bowl of normal saline is useful for rinsing and for supplementary injections if there is any delay. Do not be afraid to give the fluid rapidly. Since over 1,000 cc. pass

through the heart per minute you will not overload the heart by rapid transfusion. In addition to opening a vein, there are other avenues available for fluid administration. A stout, large needle may be pushed through the outer layer of the sternum about two inches below the junction with the clavicles until the point of the needle rests within the marrow cavity. (When properly inserted the oily marrow can be withdrawn into a syringe as a test.) Even whole blood will absorb at a fairly rapid rate through this portal.

Corpora cavernosa of the penis can be utilized in males. In grave emergencies it is sometimes necessary to sacrifice the finer details of sterile technique in favor of the more urgent need for fluid replacement. I feel it is better later to face the treatment of infection in a living patient since we now have the sulfonamides, Penicillin, and other antibiotics, than to let the patient die from shock.

In any form of rapid fluid replacement there is a note of caution. As soon as possible the bleeding point must be secured if only temporarily. If fluid is replaced (as it should be) to the point where the blood pressure recovers, any life saving clot may be blown out. Many an ectopic pregnancy death attests this tragedy. Replace the fluids as rapidly as possible but be prepared to block any further fluid loss.

Morphine should be used cautiously and only for severe pain or restlessness. In a real emergency it is not needed and may be decidedly harmful.

Moving the patient causes pain, anxiety, chilling, greater demand for oxygen and may dislodge the clot — all unfortunate factors. Move her as little as possible until the bleeding has been scotched and the fluid has been replaced. Insulation against drafts or chilling is valuable but heat therapy is detrimental. Only dry blankets should be used. The shock patient may easily be burned by a hot water bag which seems only comfortable to the attendant. The use of one or two blankets is enough.

CONCLUSION

1. Take alarm early. Very few hemorrhages are overwhelming. It is the steady, drip, drip, drip, which is misleading, and the patient all too often hits the "shock pitch" before we are organized to act. By actual investigation, an average of seven hours elapses in obstetrical deaths, between the first sign of bleeding and death.

2. Do not depend on pulse rate, laboratory reports or blood pressure readings. They do not reflect the patient's proximity to death.

3. Treat adequately. The patient in shock needs at least 1,000 cc. of blood or plasma. There is no satisfactory substitute, although there are several temporary ones. Plasma in your car will save a life sometime, if you carry it long enough, and use it early enough.

4. Severe blood loss, even if not sufficient to result in shock, is often the precursor of a lethal infection.

SUMMARY

The real evaluation of deaths from hemorrhage in obstetrics is composed of deaths from frank hemorrhage, deaths from abortion (hemorrhage and infection) and deaths from infection (preceded by hemorrhage). Viewed in this perspective it becomes the most important single cause of maternal mortality.

By actual investigation in nine out of ten deaths from hemorrhage in Oklahoma, the blood loss began during or just after delivery or abortion. The physician who accepts obstetrical cases must accept the responsibility for those deaths, and must in the future be prepared to prevent them.

What A Galaxy

On Dr. Welch's pathological staff were William T. Councilman, who had worked earlier in Vienna, Strasbourg, Leipzig, and Prague, Alexander C. Abbott, hygienist and bacteriologist, George H. F. Nuttall, bacteriologist, and Simon Flexner, Fellow in Pathology. Walter Reed (later of yellow fever fame), Dr. A. W. Clement (veterinarian), and J. Whitridge Williams (later obstetrician), William T. Howard, Jr., and J. Homer Wright were doing research work in the laboratory though they did not live in the Hospital. On Dr. Osler's medical staff were Henry A. Lafleur, Resident Physician, Harry Toulmin, Assistant, D. M. Reese and J. A. Scott, interns. William Sydney Thayer acted as Differentiating Physician for the Out-Patient Department, and John Hewetson, August Hoch, and later Harold Parsons and Frank R. Smith were Assistant Resident Physicians. Another member of the staff who became a close friend of mine was Rupert Norton (son of Charles Eliot Norton). Dr. Lafleur was in charge of the courses in the Clinical Laboratory. He resigned as Resident Physician late in 1891 and was succeeded by Dr. Thayer.—*Time and the Physician. The Autobiography of Lewellys F. Barker. p. 42. G. P. Putnam's Sons. New York.* 1942.

What's In A Name?

Many have wondered about the origin of my name, Lewellys Franklin. It seems that my father wished to have me called something more distinctive than James, William or any other common family name. He had been a great admirer of Benjamin Franklin, having read his *Autobiography* and *Poor Richard's Almanack*, so he decided upon Franklin as my middle name. In a letter to John Alleyn, Franklin wrote: "Be studious and you will be learned. Be industrial and frugal and you will be rich. Be sober and temperate and you will be healthy. Ben in general virtuous, and you will be happy. At least you will, by such conduct, stand the best chances for such consequences." Whether or not my father ever read this particular passage, the ideas expressed agreed closely with his own views of a well-ordered life.—*Time and the Physician. The Autobiography of Lewellys F. Barker. Page 4. G. P. Putnam's Sons. New York.* 1942.

Chronic Sinusitis - A Safe Management and Treatment

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At the time of the first visit, a case of chronic sinusitis, the etiology must be determined if possible. A listing of the many causes of chronic sinusitis with a discussion of each would fill a good sized volume. I will merely list a few of them with short comments:

1. Predisposing factors:
   a. Allergies — from food, pollens, smoke, dusts, chemical and bacteria.
   b. Fatigue—overwork, and loss of sleep are factors especially during wartime.
   c. Malnutrition — deficiencies of vitamin and minerals, especially vitamins A, C and D.
   d. Glandular Diseases — especially the climateric of male and female.
   e. Climate — in either wet or dusty climates or where there are rapid changes of temperature.
   f. Hereditary — narrowed or constricted air channels.
2. Local Factors
   a. Malformations — traumas and anomalies of the nasal structures.
   b. Foreign Bodies and Tumors causing obstructions.
   c. Chronic Rhinitis — this is probably due to chronic allergies, or the so-called old-fashioned catarrah.
3. Exciting factors:
   a. Bacterial invasion of devitalized mucous membranes with extension into the sinus cavities through the ostei.
   b. Para apical tooth abscesses with extension into sinuses especially to the maxillary.
   c. Osteomyelitis.
   d. Transfers by blood and lymphatics of infected material.
   e. Following acute infectious diseases.

Symptoms are many and varied, but the most common for chronic sinusitis, are headache, dizziness, pressure pains, fullness in the affected sinuses, point pains in top of head and back of neck, pains in various parts of the body or muscular rheumatism, neuritis and neuralgia pains in neck, arm and shoulders and accompanied by nasal stuffiness. Many complain of an eyestrain, and a feeling of pinching pressure through the bridge of the nose. There is a chronic secretion from the nose which may be purulent, blood streaked or clear. There are acute exacerbations in which the symptoms of acute sinusitis occur with extreme pain and fever, but in chronic sinusitis the temperature is abnormally subnormal. In the latter case the patient appears to be chronically ill in general and a fever produced by vaccine, or by any foreign protein parenterally is of value in the treatment. Many complain of a "clicking" sensation and sound after blowing the nose.

The diagnosis is made by the chief complaints of the patient. The routine nose and throat examination with transillumination of the maxillary and frontal sinuses and x-ray examination are the main factors in the diagnosis. A chronic nasal secretion with pain on pressure over the sinuses affected are important diagnostic signs. Transillumination of a painful sinus at times is negative though the pain may be due to a vacuum caused by closure of the sinus opening and absorption of the air within the sinus.

The treatment is important and some of the "don't" should come first. Do not probe the chronic sinus unless absolutely necessary for drainage. The treatment lasts from six to eight weeks, and if you probe or irritate the sinuses three times weekly for that time the course of treatment will be prolonged. Most of the patients have been treated before and many women are in tears on the first attempt at probing. Irrigation of the sinuses is of little value and tends to aggravate the disease. Refrain from surgery which will leave scarification around the sinus opening or leave a strictured sinus opening. Don't allow prolonged use of ephedrine compounds and inhalers of various sorts. The ephedrine compounds may make the patient extremely nervous and cause loss of sleep and in this way injure the health of the patient. Don't overtreat with any drug ,especially the sulfonamides. Always explain to the patient that he is to be treated from six to eight weeks, that the treatment will not be painful and that he is not to start the treatment if he is to be away for even a weeks interval.

The objectives of treatment are: 1. establishment of natural sinus drainage; 2. riddance of the infection or irritating factor; 3. restoration of normal sinus function; 4. restoration of the health of the patient.

Establishment of natural sinus drainage is accomplished by removal or shrinkage of obstructions. If there is a hypertrophic rhinitis present shrinkage with ephedrines in the form of Rhinazine by Lederle is preferred unless hypertension or exopthalmic goiter is present. In the latter cases, neosynaphrine, one-fourth per cent, with sulfathiazole is preferable.

Always ask the patient if he is sensitive to iodine and if not, use potassium iodide, saturated solution, by mouth in the dosage of 15 drops 3 times daily in water until there is liquifaction of secretions from the nose and eyes.

Two cc Iodolake — stronger, by Lakeside Laboratories, given parenterally in the subdeltoid region on alternate days until drainage of the sinuses is established is preferable. This treatment should require only one week. All necessary probing and dilation of the sinuses should be done during this time. Removal of polyps or similar obstructions should be accomplished during the drainage period. Negative pressure helps establish drainage and leaves a positive pressure which can be treated by Tyrothricin spray. This aids in killing the infection within the sinus. The patient should be placed on a wholesome diet of fruits and vegetables, milk, cream, butter and eggs. The administration of vitamins and minerals is left to the discretion of the doctor. It is preferable to give 100 milligram tablets of ascorbic acid three times daily throughout the treatment or longer for its revitalizing influence.

Riddance of the infection is accomplished by the use of the Lilly's Streptococcus-Staphylococcus Vaccine No. 4, and the continuance of the vasoconstrictors mixed with the sulfonamides sprayed into the nose. Negative pressure is produced to be followed by the Tyrothricin spray. The vaccine dosage is given as two to four minims, but the heavy dosage of one cubic centimeter increased to two cubic centimeters on the last two inoculations is well tolerated by most patients.

Penicillin is ineffective unless drainage is established. Even so, the symptoms reoccur in a very short time in most patients. Penicillin must be given continuously in 20,000 unit inoculations every four hours, and the patient should be hospitalized, for continuous treatment, in order to maintain adequate amounts of this drug in the system. Most chronic sinusitis patients do not desire hospitalization. They are ambulatory and able to follow ordinary pursuits. Penicillin is therefore not recommended as a general treatment for chronic sinusitis. Instillation of Penicillin solution into the antrum is recommended in chronic purulent sinusitis if other methods fail.

Restoration of normal sinus function is accomplished by intravenous administration of Sodium Ascorbate, 1 to 500 solution three times weekly. Ascorbic Acid 100 milligram tablets are continuously given three times daily as in the beginning of the treatment.

The nasal shrinkage sprays are continued if hypertrophic Rhinitis is present. The tyrothrician sprays are used as usual at each visit of the patient three times weekly, after producing negative pressure. Twelve to fifteen treatments are given using the sodium ascorbate intravenously. Gradually the pale edematous mucous membrane will return to normal and show a revitalization. If there have been some blood streaks these gradually disappear, likewise the granular appearance of the mucous membranes. In the bleeding type of mucous membrane the vitamin C is certainly indicated.

The restoration of health to the patient has practically become accomplished at the end of the six to eight week treatment. The side reactions noted are all good under this management except in a few patients who are hypersensitive to the vaccine and show a sensitivity to the iodides.

As for glandular therapy the estrogens and testosterone should be administered when indicated in the climacteric. In the series of approximately 35 cases all claimed much improvement and approximately two-thirds claimed to be cured.

What Is Hopkins?

Toward the end of our internship, I told my friend, Dr. Cullen, that I thought I should like to do some postgraduate work at the Johns Hopkins Hospital. He said, "Lew, what is Hopkins?" I showed him an issue of the *Johns Hopkins Hospital Bulletin* that contained a photograph of the hospital, and Cullen said, "If you go, I'm going with you."

The house staff was much excited when it was learned that Dr. Howard A. Kelly, the gynecologist of the Johns Hopkins Hospital, had been invited to perform an operation in the hospital. Several surgeons of the Visiting Staff were on hand. I gave the anesthetic and Tom Cullen acted as surgical assistant, handing the instruments to Dr. Kelly as he called for them. Everyone was greatly impressed with the speed and skill of Dr. Kelly's surgical technique. After the operation, Cullen said to me: "That settles it; I want to go to Johns Hopkins and work with Dr. Kelly." Having heard much of the brilliance of the work of Dr. William Osler, who was Physician-in-Chief at Johns Hopkins, my reply to Cullen was: "Well, if you choose Kelly, I'll go to Osler if he'll have me." (Cullen followed Kelly and Barker followed Osler).—*Time and the Physician. The Autobiography of Lewellys F. Barker. pp.* 34-35. *G. P. Putnam's Sons. New York.* 1942.

CLINICAL PATHOLOGIC CONFERENCE

University of Oklahoma School of Medicine

Presented by the Departments of Pathology and Urology

ROBERT H. AKIN, M.D.—HOWARD C. HOPPS, M.D.

DOCTOR HOPPS: Our case for this morning presents a difficult diagnostic problem. Although the patient's initial symptoms were readily and accurately evaluated something happened during his hospital course which was quite out of the ordinary and which terminated in an unexplained death. Dr. Akin will discuss the clinical aspects.

PROTOCOL

Patient: T. T., white male, age 58; admitted May 14, 1945; died June 16, 1945.

Chief Complaint: Incontinence of urine, burning on urination, and left hemiplegia.

Present Illness: This man was well until three years ago, when he awoke one morning at 5:00 a. m. unable to move his left arm or leg. In the course of succeeding months there was gradual improvement, but a residual partial paralysis of the left arm and leg persisted. About one month prior to admission he became incontinent of urine and had to wear a bag to hold urine so that he could get about. There was no history of previous urinary trouble. Approximately one week prior to admission the patient suddenly lost consciousness and fell to the ground. He recovered after a few moments and suffered no residual effects.

Past and Family History: Noncontributory.

Physical Examination: Revealed a well developed, well nourished, white male apparently not acutely ill. There was partial paralysis of the left arm and leg. Pupils were small and did not react to light or accommodation. The chest was normal; no rales were heard. The heart was not enlarged to percussion and no murmurs were heard. Blood pressure was 130/60. No masses or tenderness were noted in the abdomen. Reflexes were hyperactive in the left extremities. There was four plus pitting edema of both feet and legs.

Laboratory Data: On admission the urine was blood red and cloudy. Reaction was acid. Specific gravity was 1.010, there was a trace of albumin, no glucose. There were 200-300 red blood cells per h.p.f., occasional white blood cells, but no casts. On June 7, 1945, the urine was of amber color and there was no protein. There were 20-22 red blood cells and innumerable white blood cells per h.p.f. Urinalysis on June 14, 1945, revealed three plus proteinuria with innumerable red blood cells and white blood cells seen microscopically. On admission hemoglobin measured 10 Gm. and red blood cells 3 59/cu.mm., white blood cells numbered 7,450/cu.mm., with 67 per cent neutrophils, 28 per cent lymphocytes and 5 per cent eosinophils. Four weeks later (6-15) hemoglobin had dropped to 7.5 Gm. and red blood cells to 2.42. There was a leukocytosis of 16,450/cu.mm. with 88 per cent neutrophils and 12 per cent lymphocytes. The blood N.P.N. was 35 on May 14, 1945, phosphorus 3.2 and acid phosphates 2.1 B. U. on June 1, 1945, the N.P.N. was 60 mg. per cent. The Mazzini and Wassermann reactions were both four plus. X-ray examination on May 15, 1945, revealed no abnormality of the bony pelvis.

Clinical Course: The patient was prepared for cystoscopy on May 15, 1945, but the bladder was so irritable that detailed examination could not be made. All edema of the legs and feet had disappeared. On May 19, 1945, cystoscopy revealed considerable prostatic inflammation of the bladder mucosa with areas of sloughing. This was treated with sulfathiazole and mandelic acid. On June 1, 1945, the patients temperature spiked to 103.6 degrees F. Sulfathiazole was begun again and the patient received penicillin for seven days but the fever continued, septic in type, with peaks at 103 degrees — 105 degrees F. On June 7, 1945, bubbling rales were noted in both lungs. He failed to respond to stimulants and died on June 16, 1945.

DOCTOR AKINS: To evaluate this case properly we must go a little further back than the immediate present illness. The paralytic stroke described three years prior to hospitalization here is pretty definite evidence of a cerebro-vascular accident and suggest rather strongly marked arterosclerosis as a predisposing cause. This is one of the

degenerative lesions which so often characterizes old age or senility as you know. Although this man was but 58, an age that many of us are strongly opposed to consider as the onset of senility, yet we must think of various other associated "senile" changes that may have existed and contributed to this clinical picture. Lest you misunderstand my reference to age and senility, I hasten to add that there is no absolute direct relationship between the two and that whereas in some, senility may begin at 45 years, there are many notable examples of men in their seventies who are far from senile.

At any rate this man did have cerebral signs and symptoms presumable related to arteriosclerosis. Examination revealed also considerable prostatic hyperplasia, another manifestation of senility and one responsible for many difficulties in patients of this age group. A third manifestation of old age in a patient of this sort which we must keep in the back of our mind even though there was no obvious indication in this patient, is arteriosclerotic heart disease.

The first urinary difficulty was experienced one month before admission. With the history of a previous cerebro-vascular accident one would first think of some casual relationship there, since occasionally urinary retention, with incontinence on the basis of overflow, does develop following a stroke. The interval of almost three years between these to occurrences is adequate basis to dismiss the thought.

Urinalysis promptly established the fact that this patient had a serious infection of the urinary tract. This together with the prostatic hyperplasia (enlargement of the prostate is suddenly and greatly aggravated by inflammatory edema and hyperemia) seem adequate explanation of the patient's illness. Cystoscopy revealed a marked ulcerative cystitis and treatment was begun using sulfathiazole and mandelic acid. An indwelling catheter was inserted.

Treatment in patients such as these, and we see a great many, is always a serious problem. So often the general condition of the patient is such that we have to be on constant guard again cardiac failure and/or pneumonia; we have to try to combat the effects of renal failure; we have also the problem of an infection which, in addition to doing extensive local damage, may become generalized. This man might have done better if a retention catheter had not been introduced. On the other hand the majority of patients do better with a catheter. Without knowing the exact extent of the infection in the prostalic gland, and we can't find out during these acute episodes, we can't be certain which is the better procedure. We're inclined to establish drainage however because this, in addition to helping the infection in the majority of cases, also prepares the patient for prostatic resection and gives him a chance for complete recovery. As you have read in the "clinical course" this patient was getting along satisfactorily until, two weeks before his death, he developed a septic fever and other evidences of serious infection which did not respend to sulfathiazole or penicillin. I suspect that this represented a spread of the prostatic infection. The manner and extent of spread however is not apparent from the clinical data.

DISCUSSION

CLINICAL

QUESTION: What was the basis for the edema of the feet and legs?

DOCTOR AKIN: There was no evidence of cardiac failure and I think it must have been due to an obstructive lesion in the vessels going to the legs.

QUESTION: Did you consider the possibility of carcinoma of the prostate.

DOCTOR AKIN: The gland was smooth and not hard. X-rays revealed no metastatic lesions in the pelvis and acid phosphatase was not elevated.

QUESTION: Was the urinary infection related to catheterization?

DOCTOR AKIN: We do not know whether or not this patient was catheterized before we saw him and because of that lack of knowledge we do not know how much urinary retention might have been present. The considerable amount of blood in the urine suggests that catheterization, with considerable trauma, might have been done. In this case it might have spread an infection in the prostate. There is also the possibility that the catheter itself might have introduced pathogenic organisms.

QUESTION: How much renal damage was there?

DOCTOR AKIN: The initial N.P.N. determination did not indicate any serious degree of impairment (there may be considerable renal dysfunction before nitrogeneus retention begins). Later the N.P.N. was elevated. This could mean a renal infection or again it might mean an inflammatory destruction of the ureteral orifices. I believe that he did have pyelonephritis.

ANATOMICAL DIAGNOSIS

DOCTOR HOPPS: Several points of teaching value in this case deserve special emphasis. For one thing this case illustrates the need for constant attention and though even in those patients who have a well established diagnosis and have been in the hospital several weeks and have survived one or more changes in service. Even the case of an old man with benign prostatic hyperplasia there

are, as Dr. Akin pointed out, many hazards to be on guard against and it requires frequent reevaluation to pick these up at a time when treatment is most effective.

At necropsy, from external examination, the most striking change was the definite enlargement of the left leg as compared with the right. At mid-thigh, the circumference of the legs measured 50 cm. and 33 cm. respectively. On the basis of this finding alone, plus the history, we made a tentative diagnosis of thrombophlebitis and, perhaps pulmonary embolism. The left iliac vein was found to be converted into an abscess cavity. Its lumen, for approximately eight cm., was filled with thin grayish pus, i.e., pyothrombosis. Proximally and distally to this, a solid thrombus completely obstructed, extending into the femoral and hypogastric veins below, and to the bijurcation of the vena cava above. A seven c. thrombatic embolus was found lodged in the pulmonary artery and probably acted as the precipitating cause of death.

The major disease from which this man was suffering during his last two weeks of life was pyemia. There were perhaps 30-40 septic infarcts in the lungs, several of which had been converted into frank abscesses. The pancreas contained 10 abscesses from 3 to 10 mm. in diameter and there were multiple tiny suppurative foci in the kidney.

For the proper evaluation of a septic state such as this we should consider the effects or changes under their major headings.

1. Direct effects of the organisms per se:

This includes focal abscess as were described above or perhaps the lesions will be non suppurative as they most often are in subacute bacterial endocarditis. Not infrequently there will be acute vegatative endocarditis, a manifestation which this particular patient did not show.

2. *Degenerative changes related to toxemia*:

The findings in this case are illustrative. The liver and kidneys were each considerably increased in weight and appeared swollen. Capsular surfaces were more opaque than usual and the organs appeared almost as though parboiled. Cut surfaces bulged considerably, additional evidence of parenchymay swelling with increased intracapsular tension. The heart exhibited moderate pallor and was flabby. Microscopically, in addition to the changes characteristic of "cloudy swelling," there was fatty change (degeneration) of these organs. Probably all tissues of the body undergo qualitatively similar changes in an infection of this sort, but it is in the liver, kidney and heart that they are most apparent.

3. *Changes related to defensive mechanisms*:

Here are included the so-called septic hyperplasia of the spleen (in this case it was enlarged 100 per cent and quite flabby) and hyperplasia of the lymph nodes (here enlarged 2-3 times). The von Kupffer cells of the liver, an element of the reticulo-endothelial system, and the bone marrow are also subject to hyperplasia.

On the basis of our findings we were able to reconstruct the sequence of events in this case as follows:

1. Prostatic hyperplasia led to urinary retention and predisposed to a suppurative, ulcerative cystitis which was responsible in large part for the urinary findings described and for the initial fever.

2. In addition to the prostatic hyperplasia there was focal prostatitis and seminal visiculitis which caused thrombosis and infection of periprostatic veins.

3. Extension of infection through the periprostatic veins ultimately reached the larger pelvic veins and the left iliac vein, giving rise to thrombosis and infection there.

4. Continuation of the infection in the left iliac vein lead to suppuration and embolic seeding of the blood stream, i.e. pyemia. This resulted in multiple abscesses, various degenerative changes of toxic origin and hyperplasia of spleen, lymph nodes, bone marrow, etc.

5. A larger fragment of the thrombus became dislodged and finally reached the pulmonary artery, being the immediate cause of death.

One other finding of interest was syphilitic aoritis and aortic valvulitis with aortic insufficiency. This explains the unusual pulse pressure which this patient had, 70 mm.

We were not permitted to examine the brain in this case but the evidence is quite certain of a previous cerebro-vascular accident.

DISCUSSION

QUESTION: Was there evidence of marked renal damage?

DOCTOR HOPPS: The most important lesion was, as Dr. Akin suggested, an inflammatory narrowing of the vesico-ureteral orifices causing early hydroureter and hydronephrosis. The suppurative foci were pretty recent and were not as yet extensive.

QUESTION: How old was the spyhilitic aoritis?

DOCTOR HOPPS: It's difficult to say, but this was probably from 15 to 40 years old.

QUESTION: Why wasn't a heart murmur heard if there was aortic insufficiency?

DOCTOR HOPPS: Probably because it was not carefully listened for. This case illustrates the fact that many persons who have had syphilis for many years and who have not had specific therapy suffer no obvious ill effects. This man's heart was approximately 30 per cent over weight, and the left ventricle was moderately dilated, the aortic valve orifice measured 10.5 cm. in circumference as contrasted with a normal of about 7.5 cm. There was definite aortic regurgitation but not such much that he could not compensate for it.

SPECIAL ARTICLE

Further Observation on Manpower and Disease

LEWIS J. MOORMAN, M.D.
OKLAHOMA CITY, OKLAHOMA

Those who question the theory of stimulation of the mind through the toxemia of disease, tuberculosis the outstanding example, still face the fact that aside from the seeming strange psychic stimulus often associated with the toxic effects of tuberculosis there is the obvious response to environment. In other words a disease which puts one down for months creates a mental problem which must be recognized. It is well known that tuberculosis may give rise to two distinct manifestations: the depletion of physical energy and, directly or indirectly, the stimulation of mental activity. The human organism's response to environment is materially influenced by these two factors. In those who are endowed with exceptional mental qualities, and are at the same time suffering from tuberculosis, there often seems to be a strange psychic stimulus bent on creative accomplishment. Dr. Charles H. Mayo once said, "The years spent in voluntary obedience to the rules of treatment may have a lasting influence and remove the one great obstacle to success in life." Certainly, during the silent watches accompanying the course of tuberculosis, many a sufferer has discovered the saving presence of a creative instinct.

Doctors know that in the course of a long illness the essential elements of personality must be revealed. Erich Ebstein in *Tuberculose als Schiecksal* referred to the fact that biographers and critics have long recognized progressive tubeculosis in geniuses as a possible factor contributing to their individual greatness. He does not admit that the disease causes genius but agrees that it may fan into flame an otherwise dormant spark. While it is true that the Capadocian physician referred to this strange phenomenon in the 2nd Century A. D., we cite more recent observers.

Erick Stern, the poet Norvalis and Klabund wrote about the stimulating influence of the tubercle bacillus. The physician MacLeod Munro impressed with this stimulating influence said, "The patient has an insatiable craving for a full and active life. He lives in an atmosphere of feverish eagerness to seize the fleeting moments before they pass. These characteristics are particularly noticeable in those of naturally artistic or literary tastes."

Dr. Lawrence F. Flick said, "the tuberculous may make life more pleasant and make the individual more profitable to society than he otherwise would be." Havelock Ellis in *A Study of British Genius* points out the predominance of genius among tuberculous personages. Dr. J. A. Hyers in *Fighters of Fate* considers the probability of mental exaltation under the influence of the tubercle bacillus and attributes some of Chopin's great masterpieces to this motivating factor in disease. Dr. Arthur C. Jacobson in *Genius Social Revelations* believes that "the tuberculous by-products are capable of profoundly affecting the mechanism of creative minds in such a way as to influence markedly their creations." He goes on to say, "Were the present writer to give an almost sure recipe for producing the highest type of creative mind, he would postulate an initial spark of genius plus tuberculosis."

One of the critics of John Millington Synge, after referring to his supersensitive temperament said, "he naturally clutched at extremes with all the hectic greediness of a consumptive." J. Middleton Murry said of Katherine Mansfeld, "When the full tide of inspiration came, she wrote till she dropped with fatigue—sometimes all through the

night, in defiance of her illness." Matthew Arnold said of Maurice de Guerin, "The temperament, the talent itself is deeply influenced by the mysterious malady; the temperament is devouring; it uses vital power too hard and too fast." Munro said of Hood: "As his health declined his poetical fire seemed to burn more brightly, and the 'Song of the Shirt,' as he pathetically put it, came from a man on his death-bed. 'The Bridge of Sighs' soon followed this, and these two poems, written within a few months of his death, set the seal upon his greatness as a poet." Munro also attributed to John Addington Symonds, "that nervous, fretful, and fitful energy which is so characteristic a feature of the artistic or intellectual phthisical patient."

Lincon Lorenz said of Sidney Lanier, "His bodily fever heightened the temperature of his spiritual passion." Dr. Vere Pearson discussing the psychology of the consumptive referred to the restless agitation of the mind and "the feeling of apprehension lest life should be shortened."

Dr. Robert L. Pitfield and Sidney Calvin wrote about John Keats' psychological response to his disease. Quoting Jeanette Marks in *Genius and Disaster*: "It has been said that a man is what his microbes make him, and in nothing, it would seem, is this more true than with the man of genius."

John B. Huber in his work on *Consumption and Civilization* made the following statement: "It appears to me that the quality of the genius of a great man, if he be consumptive, may be, in some cases at least, affected by his disease."

Dr. John Brown of Edinburgh, author of *Rab and His Friends*, observed a certain mental exuberance as he studied the psychology of his tuberculosis patients. Discussing the case of his young friend, Dr. William Henry Scott, he made this significant comment, "He died of consumption and had that sad malady, in which the body and soul, as if knowing their time here was short — burn as in oxygen gas — and have 'hope, the Charmer' with them to the last — putting into these twenty years the energy, the enjoyment, the mental capital and rapture of a long life." Nevinson has said of Schiller: "It is possible that the disease served in some way to increase his eager activity, and fan his intellect into keener flame."

In *Tuberculosis and Genius*, University of Chicago Press, 1940, the sufferers speak for themselves in no uncertain terms. In addition to this brief summary of opinions expressed in popular writings, attention is called to the fact that medical textbooks recognize the profound influence of tuberculosis of the nervous system.

Finally we must admit that the present evidence of a specific psychic stimulus from disease is founded wholly on the clinical manifestations which in some cases seem to warrant a belief in a toxic factor with psychic selection. But while we await the proof of such a stimulus we must recognize the obvious influence of environment and the compensatory efforts on the part of the patient to meet the insistent demands of a dread disease, to defeat the annulling vision of approaching death, and, in some, to disguise a consciousness of the dismal truth.

No doubt the late Robert Tuttle Morris was struggling with the uncertain origin of this psychic stimulus when in *Microbes and Men* he said, "great men are inspired to their finest efforts either because of, or in spite of, the stimulus of a germ disease." There is nothing original in this observation. While it must be admitted that tuberculosis holds the spotlight, it is only fair to assume that if other diseases, not affecting the mind, were of similar duration, we might expect a similar compensatory response. Finally, we may say that the manifestations of genius, whether attributed directly to the toxemia of a germ disease of the indirect influence of compensatory reactions, implies the innate possession of exceptional mental qualities.

The Medicine Man

While at work in the drugstore I was impressed by the large number of persons who bought patent medicine without any knowledge of what they contained and solely because of their virtues as vaunted in advertisements. That the sale of such proprietary medicines must be very profitable to their manufacturers became clear to me when I studied the analyses that had been made of some of them and found that mixtures that cost the makers only a few cents were sold even at wholesale for sixty cents or more. Some latent business instinct was aroused in me, and I sugested to Mr. Gibbard that our store might do well to make a "tonic" and to advertise it for sale. He agreed to this, and I was given a free hand to devise a formula and to give it a name. I remembered that most tonics prescribed by physicians were bitter and that they were made up of several ingredients. Accordingly, it was decided that the mixture should contain some gentian root and cinchona bark, as these are both bitter substances, harmless in small doses, and might well be provocative of appetite. It seemed desirable to add a little of some harmless drug that was not well known to the public at large in order that a distinctive name could be applied to the tonic. I chose blue flag (Iris versicolor) and named the mixture Franklin's Extract of Blue Flag. What good fairy influenced me to use my second name, Franklin, rather than my family name I am sure I don't know; it was, however, fortunate, for it would not have been helpful to my future medical career to have it known that I had been responsible for the origin of this proprietary medicine. For some years it had a considerable sale, helped by advertising sign boards nailed on fences in the adjacent country. I still have some qualms of conscience when I think of this rather unethical venture, but my uneasiness is salved somewhat by the fact that none of the profit from the sale of "Franklin's Extract of Blue Flag" accrued to me; it wen wholly to the drugstore in which I worked.—*Time and the Physician. The Autobiography of Lewellys F. Barker, pp. 23-24. G. P. Putnam's Sons. New York.* 1942.

THE PRESIDENT'S PAGE

For American Medicine 1945 was the year for decision, 1946 the year for action. In 1945 the 14 point constructive program for medical care was proposed by the Council on Medical Service and Public Relations and approved by the Board of Trustees and sanctioned by the House of Delegates of the A.M.A.

1. The immediate organization and incorporation of a National Health Congress representative of the medical and allied professions.

2. Development of a specific national health program, with emphasis on the nationwide organization of locally administered prepayment medical plans sponsored by medical societies.

But in the year 1945 the decision was made — a program presented that is realistic, fair, just and workable. The success of the proposed program will only be measured by the efforts put forth, by every individual of the profession working as a unit and thoroughly acquainting themselves with the overall program even to the minutest detail. Indifference, criticism and substitute plans will not suffice. We must develop the local and state volunteer prepayment plans and disseminate the services of the same to every section of the most remote rural communities and enlist the support of all allied professions, namely the dental, hospital, nursing and pharmaceutical professions.

We, the medical profession, will and should assume the responsibility of a just and fair distribution of medical services to the people. The 14 point program set out by the A.M.A. embodies an overall plan that will, if properly executed, leave with the people free choice of medical and hospital services, a free and democratic competitive program that meets the aims of our constitution. Never has our profession been called upon to assume such momentous problems involving such weighty decisions as in the year 1946.

Education of the public must play a major role regarding our plan and program and when this is accomplished we shall expect and will receive the support of the people we serve.

V. C. Riddel,

President.

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OFFICIAL PUBLICATION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

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EDITORIALS

OKLAHOMA PHYSICIANS SERVICE

The month of January is usually a period when inventories are taken. It seems appropriate at this time that we members of the Oklahoma State Medical Association should pause in our busy lives, and take inventory of our Association's Surgical and Obstetrical prepaid service — namely the Oklahoma Physicians Service Corporation.

1. The first group was enrolled effective June 1, 1945.
2. To date including January there are 24 groups enrolled, representing 1,508 contracts totalling 3,981 people, when adding the wives and children.
3. Fourteen (14) counties, to date, have approved the plan for sale in their respective areas.
4. So far, groups have been limited to employed groups.
5. The breakdown of the finances shows all bills paid to date including $2,185.00 paid to Oklahoma physicians for services rendered. Also a good start has been made in the accumulation of funds to retire foundation notes.

In summary we would say that the corporation's seven months of existence has been fruitful, and clearly shows to the critics of organized medicine that the profession is alert to social changes and is concerning itself with constructive plans for the future.— *J.F.B., M.D.*

WHAT IS SECURITY?

In the December 29, 1945 Saturday Review of Literature, Arthur E. Morgan discusses *Beyond Utopia*. After pointing out the fact that Utopia may not mean felicity and that happiness is far more elusive than we have realized, he says, "Utopia will not answer the more profound problems of life. It will only release men from immediate preoccupation with material want so that they can be aware of deeper issues. For every hundred men who can stand adversity, there may be only ten, or only one, who can stand Utopia. Shakespeare has Hecate say in Macbeth:

'And you all know security
Is mortals' chiefest enemy.'

"Terrible as world conditions are, the great problem of mankind today is not to achieve Utopia, but to be prepared to survive it."

No doubt the author would readily admit that he is not advancing a new philosophy but only relating a part of the sum of human experience. Aristophnes, in his Plutus, shows

that there can be no progress without wholesome rivalry between wealth and poverty. An equal distribution would stop the wheels of progress. Full realization of the vaunted four freedoms immediately would beget a fifth, freedom from work — the sum of the five equals starvation.

The politicians and law makers who would open the road to Utopia through regimented medicine should read history and give their minds time to mature. They should have about eight years formal education in statesmanship to help them realize that high human destiny should be fostered, not hindered by the course of government. Our government should always have a legislative conscience guided by knowledge and reason and an administrative head endowed with wisdom and integrity.

A WAGNERIAN SQUINT AT THOMAS JEFFERSON AND BENJAMIN FRANKLIN

Jefferson drafted the Constitution of the United States and Franklin swayed the constitutional convention at will. Jefferson pursued medical science throughout the land because of his general interest in the subject, and Franklin lacked only a medical degree of being one of the best doctors in the United States. It seems strange that these proponents of medicine and good government could have been so short sighted as to have overlooked social security including compulsory health insurance. Since the founders of our government failed so utterly in this respect it is remarkable that the American people did not fill the breach rather than let the opportunity pass to certain government officials. But, seeing that Bismarck with his social security program set the stage for Hitler and since the German people have achieved such a high place in the history of civilization, perhaps we should have a great American Bismarck even at the cost of a few billion bucks and personal liberty. The Teutonic philosophy which has helped to put the German people where they are today may be just what the people of the United States need. If so, why worry about a little small change and the loss of individual freedom.

If we want to move on toward the goal the German people have attained we should accept the Wagner proposal without delay. But we should make up our minds and let Congress know. Its time to decide what are the eternal pillars of Society. Strange to say, in spite of the failure of Jefferson and Franklin and their associates, we have grown stronger and lived longer and have whipped the devil out of our undemocratic enemies. Why not make up our minds to keep the devil out of our democracy.

MEN WITHOUT GUNS
A Moving Story

The Editorial Office has just received a copy of the remarkable book, *Men Without Guns*[1] by Dewitt Mackenzie. Neither men with the brush nor men with the pen can truly portray the heroic spirit, the brave deeds and the remarkable skill of our medical men at war. Yet, it must be agreed that the twelve outstanding contemporary artists contributing the 118 colorful illustrations around which Dewitt Mackenzie has built his interesting pen pictures, present the comprehensive story with a vivid sense of reality.

Competing with the painters canvas are the trenchant words from the pen of Major General Norman T. Kirk, the Surgeon General of the United States Army. In the foreword he says:

"Unequivocally and without fear of contradiction, I say with pride and reverence that one of the greatest contributions to victory has been made by the doctors, nurses and enlisted men of the Army Medical Department. Without their tireless devotion to duty, their courage and complete disregard for self-safety, the Medical Department would not be able to point today to a record of achievement unmatched in the long history of warfare.

"Because of the heroism and skill of the men and women portrayed between the covers of this book, countless thousands of our fighting men have survived wounds that would have meant certain death in the last war. Their deeds on the battlefields, in front-line medical units and in the great general hospitals, have done much to frustrate and discourage a murderous enemy intent upon destroying us with every diabolically ingenious instrument of war he could devise.

"This volume is titled 'Men Without Guns.'" It is a fitting name for a book that tells the story of men and women who fight with surgical instruments and drugs — penicillin, sulfa, plasma, atabrine and other life-saving medical agents." This remarkable book in addition to the graphic gallery representing the tragic episodes of modern warfare as seen through the eyes of gallant artists who accompanied the men without guns, presents the following chapters: "Introducing the Corpsman; Doctor to The Army; Southwest Pacific; Saipan; Italy; D-Day in Normandy; Burma Road; the Warrior Comes Home.

The text and the paintings make a striking saga, saturated with the savory spirit of Weelum MacLure "A Doctor of the Old School."

Men Without Guns should be on the reception room table in every doctor's office.

1. Men Without Guns. Dewitt Mackenzie. 177 Drawings, including 118 plates in full color by famous contemporary

artists. A dozen American artists braved the hardships and perils of war to make the notable series of historical paintings reproduced from the Abbott Collection of Paintings, now the property of the U. S. Government.

APROPOS THE PRESENT AGITATION ABOUT REST AND EXERCISE

Recent studies by Starr Maycock and Battles University of Pennsylvania are timely and it is to be hoped that further investigations may throw additional light upon the unknown factors and serve as a guide for the clinician who should be able to find the happy mean and stabilize the pendulum which is swinging high.

In the following original articles, the authors bring out the facts briefly noted below: "Convalescence from Surgical Procedures. Studies of the Circulation Lying and Standing, of Tremor, and of a Program of Bed Exercises and Early Rising. By Isaac Starr, M.D. and Robert L. Maycock, M.D. Convalescence from Surgical Procedures. Studies of Various Physiological Responses to a Mild Exercise Test. By Isaac Starr, M.D., Robert L. Maycock, M.D. and Marjorie G. Battles."

While these reports seem to be rather significant the authors modestly suggest that some hints for future studies of convalescence may be drawn from their studies.

Under No. 1, the following facts appear in the Summary:

"Forty-four patients have been studied before and repeatedly after surgical operations. The test used consisted of estimates of pulse rate, blood pressure, and cardiac output (ballistocardiogram) under standard conditions in both the horizontal and vertical positions. The results have been subjected to statistical analysis.

"The average of results obtained in 25 cases operated upon for hernia disclosed that the following significant changes occurred during postoperative convalescence:

"In the horizontal position cardiac output was diminished soon after operation, and blood presure was diminished later. In the vertical position pulse rate was increased, cardiac output tended to be increased and systolic blood pressure to be diminished.

"The difference between the lying and standing pulse rates, and the ratio between lying and standing cardiac outputs increased after operation. There was more tremor on standing, and occasionally subjects were unable to remain standing after operation."

"The scatter of the data was great enough to prevent the development of a simple test for the duration of convalescence which could be applied to single individuals. Nevertheless significant comparisons could easily be made between small series of cases.

"Ten cases of hernia were given a program of exercises in bed and early rising beginning with the second or third day after operation. Comparison with a group not so treated showed that the exercised group tolerated the upright position better than the controls when the latter were first allowed out of bed. This advantage lasted only for a day, however, so we doubt whether anything important was gained by the exercise program."

In No. II we find the following Summary and Conclusions:

"By means of a standard mild exercise test we have sought for abnormalities during convalescence from surgical procedures.

"Oxygen consumption, and volume, and rate of respiration have been determined before, during, and after standard exercise. Cardiac output (ballistocardiogram) and pulse rate were estimated before, just after, and five minutes after the same standard exercise.

"Measurement of the magnitude of the changes induced by the exercise, revealed no significant differences which could be attributed to convalescence. However, when attention was given to the duration of the changes induced by the exercise, the averages showed significant differences, the increased oxygen consumption, respiration, and pulse rate declining to the resting level more slowly during convalescence than before operation.

"The respiration and oxygen consumption of subjects at rest were not significantly changed during convalescence.

"The variability in the physiologic response to exercise was so large that a test of the type used gives no promise of providing a satisfactory measure of the duration of convalescence in individual cases. However, the slow return to normal of pulse rate, respiration, and oxygen consumption after exercise is over may have some value as an indication of persisting abnormality in certain individuals and will provide significant differences when data obtained from a series of 10 or more cases are averaged."

That such studies are under way is encouraging but so far definite criteria for the guidance of the clinician or surgeon are still wanting. The average doctor may well wonder what control studies on unoperated individuals might reveal.

1. The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the University of Pennsylvania.

PRIMARY ATYPICAL PNEUMONIA AND SUSPECTED IMMUNITY

Lembcke and Young,[1] following a suggestion that those who had primary atypical pneumonia in 1942 seemed to be relatively free from respiratory infections in 1943-1944 initiated a followup study to ascertain the facts and report the same. The authors were in position to successfully pursue such a

study as one of them had reported the 1942 cases which were to be followed.

Their interest was stimulated by Kneeland and Smetana[3] who discussed this possibility in 1940. After a careful study, Lembcke and Young reported as follows: "It is concluded that primary atypical pneumonia neither confers immunity against nor predisposes to the subsequent development of other common types of respiratory illness."

1. Incidence of Respiratory Infections following Attack by Primary Atypical Pneumonia is Unchanged. Paul A. Lembcke and Lawrence E. Young. The American Journal of the Medical Sciences. Vol. 210, No. 6, No. 885, 1945.

2. Young, L. E., Story, M., and Redmond, A. J.: American Journal Medical Science, Vol. 206, No. 756, 1943.

3. Kneeland, Y., and Smetana, H. F.: Bull. Johns Hopkins Hosp., Vol. 67, No. 229, 1940.

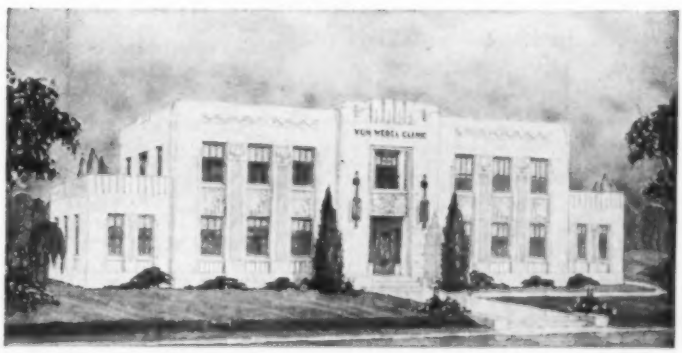
Propinquity

I took up residence in the Johns Hopkins Hospital in 1891 to live there practically continuously for the next nine years. hTe hospital superintendent assigned me to a room on the third floor of the Administration Building, which I found to be next to the bedroom occupied by Dr. Osler himself, who at that time was unmarried. In his spare time he was busily engaged in writing, with the aid of his secretary, Miss Blanche O. Humptom, nis *Principles and Practice of Medicine*, the textbook that was to become the most popular medical volume of its time, undergoing a long series of revisions by the author during his lifetime, and revised and translated by others and used widely after his death. Through this proximity to Dr. Osler's room, I learned how systematically he ordered his life, rising nearly always at the same hour, arriving at the medical wards punctually at nine each morning, eating and exercising at regular times, and working at the writing of his textbook for a definite number of hours each day. Except on evenings when he was unavoidably kept out by social functions, it was jokingly said that one could safely set one's watch at ten o'clock precisely each night when one heard him drop his boots on the floor just outside his bedroom.—*Time and Physician. The Autobiography of Lewellys F. Barker. pp. 40-41. G. P. Putnam's Sons. New York.* 1942.

Ben Franklin On Exercise

He had spells of gout and recurrent colds. It was hard to find time for the exercise he knew he needed. Thinking about it, he concluded that the amount of exercise was to be measured "not by time or by distance but by the degree of warmth it produces in the body," he wrote to his son on 19 August 1772. "Using round numbers without regard to exactness but merely to make a great difference . . . there is more exercise in one mile's riding on horsback than in five in a coach; and more in one mile's walking on foot than in five on horseback; to which I am yadd, that there is more in walking one mile up and down stairs than in five on a level floor. The two latter exercises may be had within doors when the weather discourages going abroad; and the last may be had when one is pinched for time, as containing a great quantity of exercise in a handful of minutes. The dumb-bell is another exercise of the latter compendious kind. By the use of it I have in forty swings quickened my pulse from sixty to one hundreds beats in a minute, counted by a second watch; and I suppose the warmth generally increases with quickness of pulse."—*Benjamin Franklin by Carl Van Doren, pp. 405-406. The Viking Press. New York.* 1938.

VON WEDEL CLINIC



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ASSOCIATION ACTIVITIES

IMPORTANT NOTICE

The following Section 20, Chapter 24, Article 12 of the Medical Practice Act of Oklahoma, Oklahoma Statutes, 1931, is quoted in order to bring to mind the fact that all licenses to practice medicine in the State of Oklahoma must *be registered in the county in which the physician intends to practice.* If a physician moves from one county to another he must register his license in the county to which he moves and establishes practice.

"Section 20. *Recordation of License; Penalty.* It shall be the duty of every person holding license or certificate authorizing him to practice medicine and surgery in this State, to have it recorded in the office of the county clerk of the county wherein his office is to be located. Every such person, on the change of residence to another county, must have his certificate recorded, in like manner, in the county to which he shall move his residence; and said certificate shall be displayed in his office as evidence of his having complied with the law. The absence of such record in the office of the county clerk shall be prima facie evidence of the want of possession of such license or certificate and every such physician and surgeon holding such license or certificate, who shall practice medicine and surgery, in any county of this State, without first having complied with the terms of this section, as herein provided, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined in any sum not less than Twenty-five ($25.00) Dollars, and not more than One Hundred ($100.00) Dollars."

PLANS FOR ANNUAL MEETING MOVING RAPIDLY

Dr. J. H. Robinson, Chairman of the Scientific Work Committee, announces that work is progressing rapidly on the Annual Meeting. Several Distinguished Speakers have been contacted and acceptances have been received from a number. The Chairman and Secretaries of the various Scientific Sections are working out the Section Programs and announcement will be made shortly of the Scientific Programs that have been lined up.

The Annual Meeting is to be held in Oklahoma City, May 1, 2 and 3, at the Skirvin Tower Hotel. The commercial exhibit booths will be on the Mezzanine of the Silver Glade Room. All booths have been sold.

OKLAHOMA DIVISION OF AMERICAN CANCER SOCIETY OPENS NEW OFFICE

The Oklahoma Division of the American Cancer Society, under the direction of the Executive Director, Mr. Hugh Payne, has opened new offices in the Braniff Building in Oklahoma City. Extensive plans are under way for the proposed Mobile Detection Clinic. An outline of these plans appear elsewhere in this issue.

FURTHER CRITERIA REDUCTIONS FOR MEDICAL OFFICERS ANNOUNCED

Further criteria reductions to make additional doctors available for civilian practice were announced on December 31, 1945 by Major General Norman T. Kirk, the Surgeon General of the Army.

While the number of professional men affected by this action will not be more than a thousand, the Surgeon General's Office has ordered this revision of criteria in line with the Medical Department's policy of doing everything possible to expedite the return of doctors, dentists, and veterinarians to private life.

Under the new separation plan which becomes effective January 1, 1946, (with the exception of a comparatively small number in scarce categories) dentists, and veterinarians will be released with a critical score of 65 instead of the 70 points previously required. This same group will also be able to get out of the service, if the age of 45 has been reached instead of the former age limit of 48.

The time factor of 42 months service, which will make any of this group eligible for separation, remains the same.

The following specialists in scarce categories will be released with a critical score of 80, continuous service since Pearl Harbor, or if the age of 45 has been reached; eye, ear, nose specialists; orthopedic surgeons; and internal medicine specialists.

A requirement of 70 points, 45 months service, or 45 years age limit will make the following eligible for separation; gastroenterologists, cardiologists, urologists, dermatologists, anaesthetists, psychiatrists, general surgeons, physical therapy officers, radiologists, and pathologists.

Plastic surgeons will be eligible for release if they have a critical score of 80, or service since Pearl Harbor, or if they are 48 years of age.

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REFRESHER TRAINING FOR DOCTORS LEAVING SERVICE

Refresher training of 12 weeks' duration will be given Army doctors leaving the service who desire to brush up on latest developments in fields of medicine, surgery, or neuropsychiatry in which they may not have been actively practicing during the past year, Major General Norman T. Kirk, Surgeon General of the Army, announced.

This training, which will prepare retiring Army doctors for return to private practice with latest knowledge of medical advances made during the way, will be given at Army hospitals until June 30, 1946. Reserve Corps, National Guard, and AUS Medical Corps officers who are to be separated will be eligible for this schooling.

The election of the period of refresher training is entirely voluntary, and applications may be made through channels to The Surgeon General in the case of medical officers assigned to the Army Service Forces, Army Ground Forces and Army Air Forces. Medical officers returning from overseas may make application for refresher training from the Reception Stations or Separation Centers through the ASF Liaison Officer directly to The Surgeon General. *It is pointed out that medical officers cannot be recalled to active duty from terminal leave for the purpose of accepting a professional assignment for refresher training.*

Numerous requests have been received by The Surgeon General from Reserve Corps, National Guard, and AUS Medical officers who are about to be separated and who desire to remain in service for a short period of professional duty prior to return to civilian life. These officers are anxious to return to their civilian practices with the advantages of the latest medical knowledge. Due to the tremendous demand for refresher training placed upon civilian medical teaching centers, many of these medical officers have been unable to arrange for refresher training.

The Surgeon General emphasizes the fact that the refresher training is accomplished by a 12-week temporary duty assignment in the professional field of interest at an Army hospital without per diem. Such an assignment will afford the medical officer a period of clinical work under supervision, and excellent opportunities for collateral study of recent advances in medicine, surgery, and neuropsychiatry.

GENERAL GEORGE LULL BECOMES SECRETARY AND GENERAL MANAGER OF A.M.A.

Major General George F. Lull, Deputy Surgeon General of the Army, whose notable record in that capacity won him the Distinguished Service Medal, the highest non-combatant award, has retired from the Army after 33 years of service with the Medical Corps.

General and Mrs. Lull will move to Chicago, where General Lull will become Secretary and General Manager of the American Medical Associtaion. He will take up his new duties officially in July, when the retirement of Dr. Olin West, the present Secretary and General Manager, becomes effective, but he will immediately join the staff of the American Medical Association to familiarize himself with the work of the organization.

The citation for the Distinguished Service Medal stated that, in his capacity as Chief of the Personnel Service, General Lull was largely responsible for the development of policies and studies which resulted in outstanding achievements in the Army's medical program.

Early in World War I he commanded a base hospital at Camp Beauregard, Louisiana and later organized and commanded Base Hospital No. 35 of the A.E.F. From 1922 until 1926 General Lull was Director of the Department of Preventive Medicine at the Army Medical Center. In 1929 he was appointed Medical Adviser to the Governor General of the Philippine Islands, where he served for three years. He had charge of the Vital

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Records Division of the Surgeon General's Office from 1932 to 1936.

The following four years he was Director of the Department of Sanitation at the Medical Field Service School, Carlisle Barracks, Pennsylvania. In 1940 he returned to the Surgeon General's Office as Chief of Personnel Service until May 31, 1943, when he was appointed Deputy Surgeon General.

Born in Pennsylvania March 10, 1887, General Lull received his M. D. degree from Jefferson Medical College in 1909, a Certificate of Public Health from Harvard Technology School of Public Health in 1921, and his degree of Doctor of Public Health from the University of Pennsylvania in 1922. He is an honor graduate of the 1913 class of Army Medical School.

ACCIDENT POLICY AS APPROVED BY COUNCIL MEETS WITH GREAT SUCCESS

Two years ago Dr. V. K. Allen, Tulsa, Dr. LeRoy Long, Oklahoma City and Dr. Malcolm Phelps, El Reno, were appointed on the Insurance Committee and were given the task of working out a broad coverage, low cost accident insurance for the members of the Association. After obtaining figures from several companies, a program offered by the North American Accident Insurance Company was decided upon and presented to the Council on October 7. The Council endorsed the program whereby immediate action was taken in offering the policy to the members over the state.

The first county contacted was Beckham which went 99 per cent. Units have been installed in Greer, Harmon, Kiowa and Jackson counties, participation running nearly 100 per cent in each of the counties. At the present time the program is being installed in Tulsa County and is progressing nicely. At an early date the remaining counties will be covered.

This accident coverage is underwritten by the North American Accident Insurance Company, an old line company originating in 1886 with home offices in Chicago. Since 1902 the company has operated in Oklahoma. Mr. C. W. Cameron is the state manager and Mr. Joe H. Jones the Tulsa manager. The service work for the doctors in the state is being handled by Mr. Jones. Every effort is being made to handle all claims on the policy within 24 hours after completed proofs are received in the Oklahoma City office.

MOBILE DETECTION CLINIC ADOPTED BY OKLAHOMA DIVISION OF AMERICAN CANCER SOCIETY

At its meeting on January 6 the Medical Committee of the Oklahoma Division of the American Cancer Society unanimously adopted the following outline in relation to policy, planning, procedure and operation of Mobile Detection Clinics:

Policy

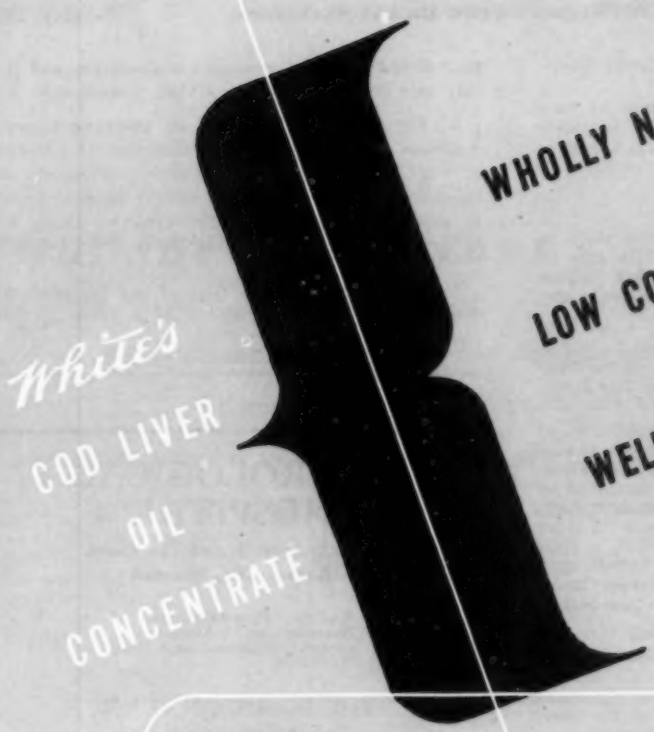
1. No county or community in this State will be serviced by the Detection Clinic except by invitation of the local County Medical Society.

2. Mobile (traveling) Detection Clinics shall be conducted only for those persons who cannot afford to pay for special examination. The designation "who cannot afford to pay for special examination" is defined as "those persons who may be in position to take care of family or individual subsistence on meager basis, yet who cannot afford additional expenses in connection with special examination."

3. *Duties of Local Physician.*

a. The local physician shall determine who is eligible for examination under the above definition.

b. All persons who present themselves for examination must be referred by local physician. The local County Medical Society shall have a designated member present to determine eligibility for



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examination of those who have no family physician.

e. The local physician shall be present at time patient is examined. If local physician is unable to be present because of an emergency, a written report of the examination shall go to patient's physician only.

4. *History Requirements*

The history of each patient examined shall be executed in advance of Detection Clinic date by referring physician. The forms for this purpose shall be furnished by the Oklahoma Division, American Cancer Society.

5. *Biopsy*

Biopsy shall be left to the discretion of the local physician and staff members of the Mobile Detection Clinic.

If tissue is taken, it shall be examined free of charge when properly prepared and sent to any member of the Oklahoma Pathologist Association. A written report, on prepared form furnished by the Oklahoma Division of American Cancer Society, will be returned promptly to the local referring physician. A copy of the report and slide shall be kept in a central depository as agreed upon by the Oklahoma Division of the American Cancer Society and the Oklahoma Pathologist Association.

Personnel of Detection Clinic Staff

The personnel of each Detection Clinic Staff shall be composed of qualified specialists selected by the Medical Committee of the Oklahoma Division of the American Cancer Society and the Cancer Committee of the Oklahoma State Medical Association.

Method of Procedure of Service

1. The Detection Clinic will visit those places in the State, previously determined upon by the Sub-Committee on Policy, Planning, Procedure and Operation, and then only upon invitation by the local County Medical Society.

2. The Executive Director of the Oklahoma Division, American Cancer Society, upon direction of Chairman of Sub-Committee on Policy, Planning Procedure and Operation, will visit any local County Medical Society to explain the workings of the Detection Clinic, and shall also make all arrangements for a Detection Clinic visit when so desired.

3. Such items as to the time of day the clinic will start, the place, the advisability of a public meeting,

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Electrocardiograph, X-Ray, Laboratory
and Complete Allergic Surveys Available.

1107 Medical Arts Bldg.
Oklahoma City, Okla.

Phone 2-0277

Not for just a year

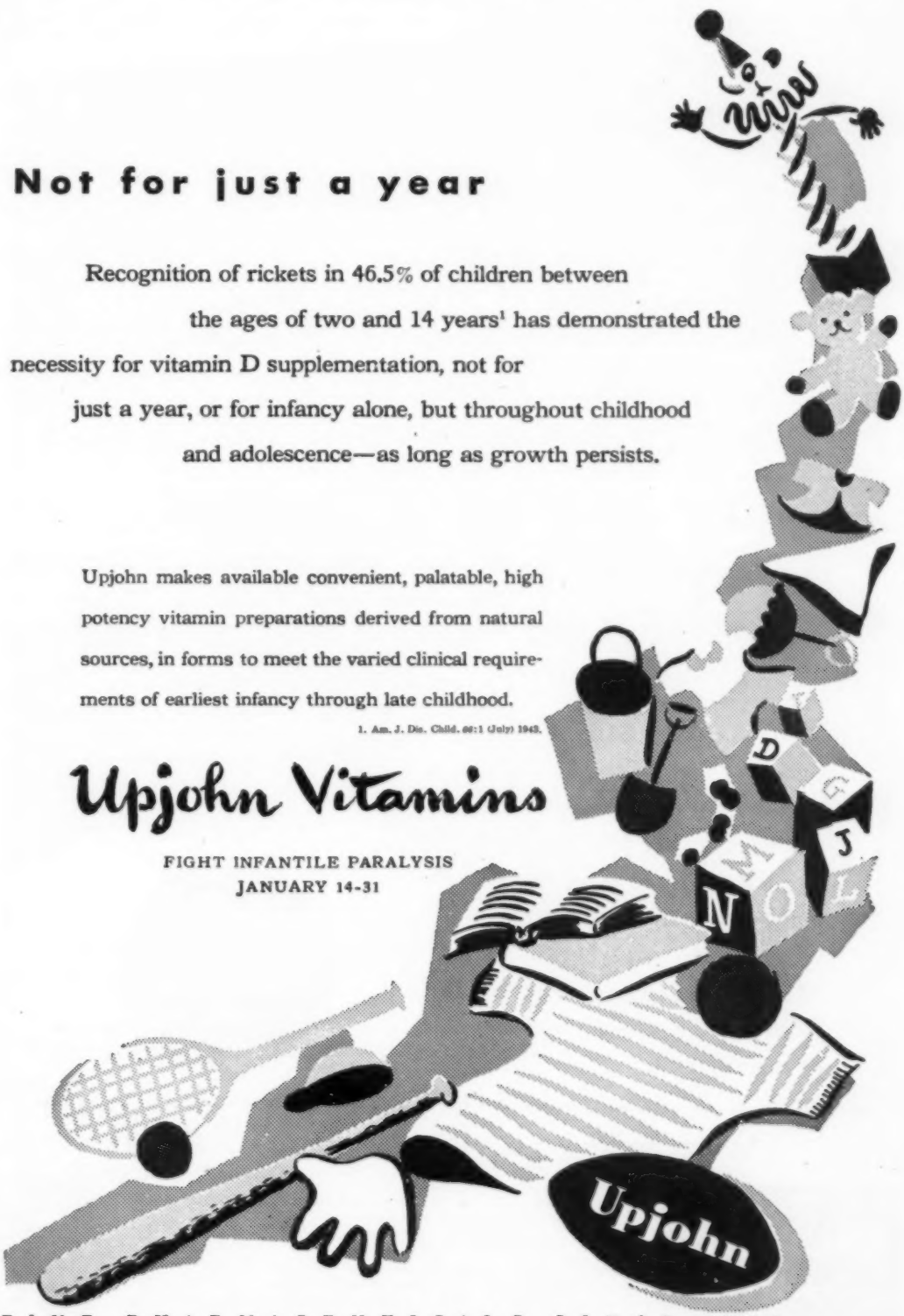
Recognition of rickets in 46.5% of children between the ages of two and 14 years[1] has demonstrated the necessity for vitamin D supplementation, not for just a year, or for infancy alone, but throughout childhood and adolescence—as long as growth persists.

Upjohn makes available convenient, palatable, high potency vitamin preparations derived from natural sources, in forms to meet the varied clinical requirements of earliest infancy through late childhood.

1. Am. J. Dis. Child. 66:1 (July) 1943.

Upjohn Vitamins

FIGHT INFANTILE PARALYSIS
JANUARY 14-31



FINE PHARMACEUTICALS SINCE 1886

Kalamazoo 99, Michigan

shall be determined by the Secretary of the local County Medical Society, the Executive Director of the Oklahoma Division, American Cancer Society and the Local Commander of the Field Army.

4. In each instance there will be a meeting of the Local County Medical Society following the Detection Clinic, at which time there shall be a scientific program on cancer.

Operation of Detection Clinic

1. All patients to be examined will be notified by family physician to be present at set time and place in advance of Detection Clinic visit.

2. Usually the staff members can keep in operation four examination tables. In order to examine as many patients as possible there should be at least one nurse for each table in operation.

3. *Nursing Personnel*
It will be the responsibility of the Oklahoma Division, American Cancer Society to provide sufficient nurses for the purpose. In this connection, the President of the State Nurses Association has assumed responsibility for providing nurses in any area in the State, provided her office is notified in advance.

4. *Secretarial Aid*
It will be the responsibility of the Oklahoma Division of the American Cancer Society to provide sufficient secretarial help.

5. *Equipment*
All equipment necessary for the operation of the Detection Clinics will be supplied and transported to and from the site of operation by the Oklahoma Division, American Cancer Society.

General Information

Publicity
All publicity relative to the Detection Clinic's visit shall have the approval of the officers of the Local County Medical Society.

Expenses
The Oklahoma Division of the American Cancer Society will bear all expenses in relation to the actual operation of the Detection Clinic. The medical personnel of the Detection Clinic Staff shall receive no compensation for services or expenses.

Pure.. Wholesome.. Refreshing

Safeguarded constantly by scientific tests, Coca-Cola is famous for its purity and wholesomeness. It's famous, too, for the thrill of its taste and for the happy after-sense of complete refreshment it always brings. Get a Coca-Cola, and get the feel of refreshment.

Drink Coca-Cola Delicious and Refreshing

PRURITUS ANI

The itching of pruritus ani may often be relieved by dilatation, especially when caused by a tight or spastic sphincter muscle which prevents bulky or dry stool from being expelled regularly and smoothly.

YOUNG'S RECTAL DILATORS

have been found very effective in breaking the impulse of rectal muscle to keep itself locked. Sold only by prescription. Obtainable at your surgical supply house; available for patients at ethical drug stores. In sets of 4 graduated sizes, adult $4.75, children's set $4.50. Write for Brochure.

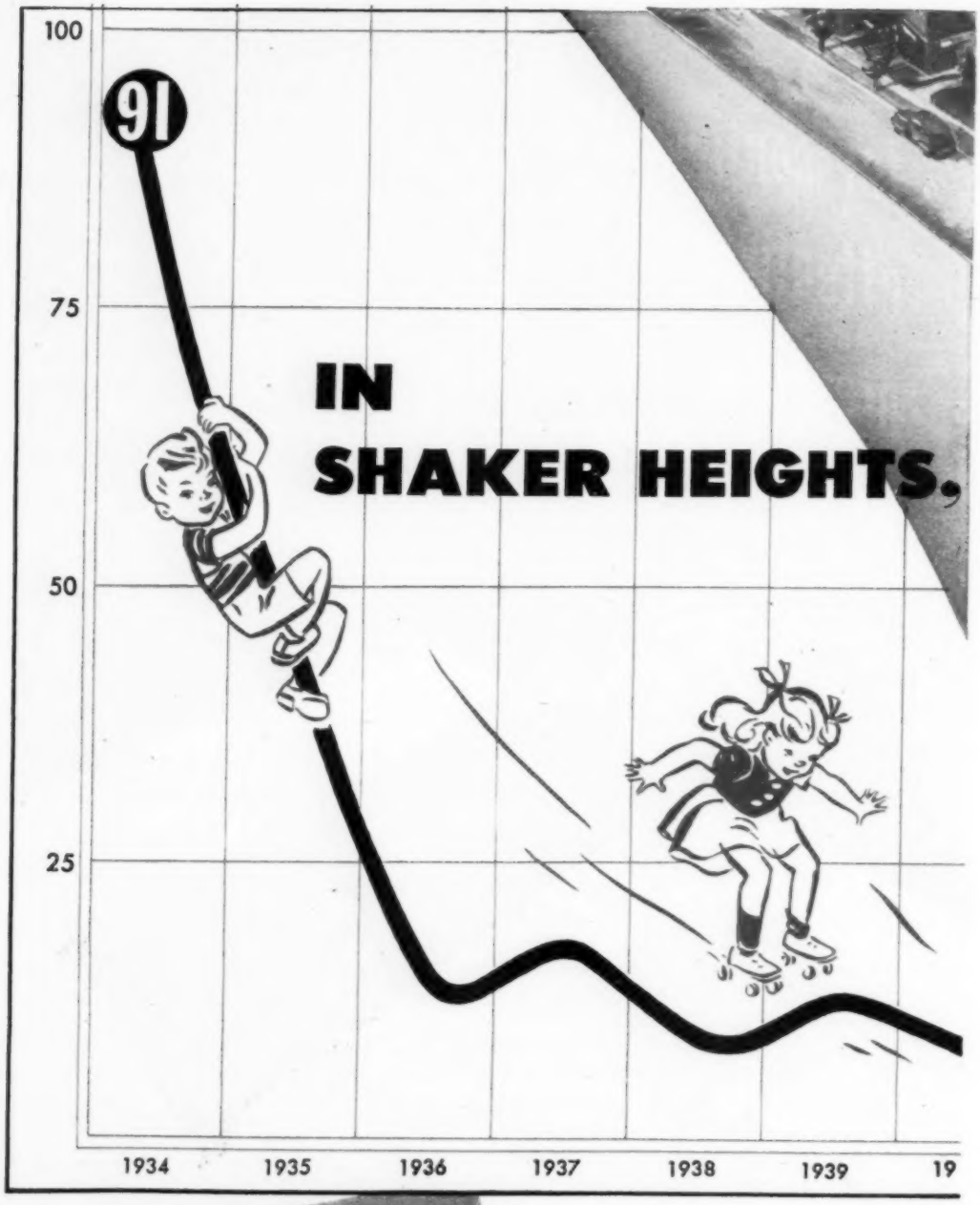
F. E. YOUNG & COMPANY, 424 E. 75th St., Chicago 19, Illinois

The active ingredient of Koromex Jelly is phenylmercuric acetate, whose remarkable contraceptive efficiency was affirmed in the illuminating report by Eastman and Scott (Human Fertility 9:33 June 1944). Their clinical and experimental data confirmed the earlier findings of Baker, Ranson and Tynen (Lancet 2:882 October 15, 1938). In addition to its excellent spermicidal efficacy, Koromex Jelly possesses to a high degree those other qualities which are physiologically and aesthetically so important to patients... For these reasons you can prescribe Koromex Jelly with *confidence*.

Write for literature.

Holland-Rantos Co., Inc.

551 Fifth Avenue, New York 17, N. Y.



PARKE, DAVIS
& COMPANY
DETROIT 32, MICHIGAN

Sole producers of

Nine years' routine immunization of Shaker Heights children of pre-school age against whooping cough, using Sauer's vaccine, has cut the annual incidence of pertussis in this age group from 91 to a yearly average of 6 during a 4-year period . . . and the six who contracted the disease in 1943 were children *who had not been immunized.*[1]

[1] Garvin, J. A., Ohio State M. J. 41:229, 1945.

. . . PERTUSSIS VACCINE IMMUNIZING (SAUER)

Sleep insurance for doctors

To the harassed doctor, 'Dexin' brand High Dextrin Carbohydrate helps provide "sleep insurance"—nights made peaceful by fewer frantic calls from worried mothers. His 'Dexin' babies sleep more soundly, and are less subject to disturbances that interrupt slumber. The high dextrin content of 'Dexin' (1) diminishes intestinal fermentation and the tendency to colic and diarrhea, and (2) promotes the formation of soft, flocculent, easily digested curds.

'Dexin', palatable but not too sweet, is readily soluble in hot or cold milk or other bland fluids. 'Dexin' does make a difference.

'Dexin' Reg. Trademark

'Dexin'

HIGH DEXTRIN CARBOHYDRATE

Composition—Dextrins 75% • Maltose 24% • Mineral Ash 0.25% • Moisture 0.75% • Available carbohydrate 99% • 115 calories per ounce • 6 level packed tablespoonfuls equal 1 ounce • Containers of twelve ounces and three pounds • Accepted by the Council on Foods and Nutrition, American Medical Association.

Literature on request

BURROUGHS WELLCOME & CO. (U.S.A.) INC. 9 & 11 E. 41st St., New York 17, N.Y.

1946

ARMOR AND ARMAMENTARIUM

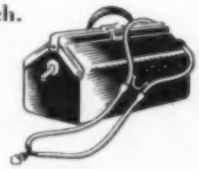
Guns are silent and grass grows in the foxholes, but there can be no peace treaty in the endless war on mankind's immortal enemy—Disease. Home comes the physician from his lifesaving on the battlefields of man-made death abroad to march again beside his colleagues who have so valiantly held the casemates of health at home.

Battle front and home front, boulevard and dirt road, the mighty facilities of the medical center and the challenge of practice in the lonely farmhouse—all are the front line trenches in humanity's continuing crusade to tame cannibal protoplasm. There is no discharge in that war.

The first cry of pain in the world was the first call for a physician. It has been answered as it echoed down the centuries; it will be answered in the unrolling years of the future.

As this questioning year of 1946 opens with the world convalescing from malignant political disease, we would like to claim the privilege of welcoming the thousands of physicians returning from unparalleled service on war fronts—of saluting those who shouldered such heavy burdens at home—of expressing the confidence that the traditional unity of the profession armed with new and potent weapons will drive the front lines of the war on disease ever forward.

We know that we are joined in this expression by all organizations which seek to play their roles, large and humble, as institutions of supply to those "bound by the covenant and oath, according to the law of medicine." S. H. CAMP AND COMPANY, Jackson, Mich.



CONFERENCE OF STATE PRESIDENTS AND OFFICERS OF STATE MEDICAL ASSOCIATIONS

Dick Graham Elected To Executive Board

The Michigan and California State Medical Association are to be complimented for their initiative in bringing about an Annual Conference of Presidents and Officers of State Medical Associations.

The first Conference held in Chicago at the time of the meeting of the House of Delegates of the American Medical Association presented an excellent program on adequate Health Service for all of the people.

The Conference met with such outstanding success that its future activities were assured by the action of those in attendance in creating a permanent organization. Dr. A. S. Brunk of Michigan was elected President for the coming year and Dick Graham was elected to the Executive Committee for a three year term.

Tax Calendar

JANUARY — FEBRUARY

H. E. Cole Company
Plaza Court
Oklahoma City

General

Delinquent advalorem taxes carry penalty of one per cent per month.

Fiscal Year Income Tax Returns are due on the 15th day of the third month following the close of the taxable year.

State Inheritance Tax or Estate Tax Returns due twelve months after date of death; tax due and payable fifteen months after death. Federal tax return due and tax payable fifteen months after death.

State and federal Gift Tax Returns must be filed by both donors and donees on or before March 15.

January

Day	Nature of Report or Payment	To Whom Made
1	1946 Advalorem Tax Returns Due —Personal, Intangible and Real Estate — Property Owned This Day Basis for 1946 Assessment	Co. Assessor
1	Applications due for Homestead Exemption	Co. Assessor
1	Return of Federal Income Tax for Calendar Year 1945 Due	Col. of Int. Rev.
15	Last Day to File Original 1945 Declaration of Estimate and Pay Federal Income Tax for Taxpayers Meeting Requirements after September 1, 1945, and Individuals Classed as Farmers. If Final 1945 income tax return is completed and filed by January 15, it will not be necessary to file an estimate.	Col. of Int. Rev.
15	Last Day to File Amended 1945 Declaration of Estimated of Individuals and Pay Fourth Quarterly Installment of Federal Income ax. If Final 1945 income tax return is completed and filed by January 15, it will not be necessary to file an estimate.	Col. of Int. Rev.
15	Last Day to File Return and Pay State Sales Tax for December, 1945	Ok'a. Tax Com.
20	Last Day to File Return and Pay State Motor Fuel Tax for December, 1945.	Ok'a. Tax Com.
20	Last Day to File Return and Pay State Use Tax for December, 1945.	Okla. Tax Com.
20	Last Day to File Return and Pay State Special Fuel Use Tax for December, 1945.	Okla. Tax Com.
31	Last Day to File Quarterly Withholding Tax Return Form W-2 Fourth Quarter 1945 and Pay Tax; Attach Form W-2 Receipt for Tax Withheld in 1945 for Each Employee and Form W-3 Reconciliation of Quarterly Returns, 1945.	Col. of Int. Rev.
31	Last Day to File Return and Pay State Gross Production Tax for December 1945.	Okla. Tax Com.
31	Last Day to File Return and Pay State Proration Excise Tax for December, 1945.	Okla. Tax Com.
31	Last Day to File Return and Pay State Unemployment Compensation for last Quarter, 1945.	Okla. Employment Security Com.
31	Last Day to File Return and Pay Social Security Tax (O.A.B.) for Last Quarter 1945.	Col. of Int. Rev.
31	Last Day to File 1945 Return and Pay First Quarter Excise Tax Form 940, Title IX under Social Security Act. (This Tax, known as federal unemployment insurance tax, amounts to three per cent of the 1945 payroll, less amount paid to State Unemployment Compensation Funds.	Col. of Int. Rev.
31	Last Day to File Return and Pay Federal Excise and Miscellaneous Taxes for December, 1945.	Col. of Int. Rev.
31	Last Day to File Employer's Application for Termination of Coverage Under the Oklahoma Employment Security Law.	Okla. Employment Security Com.

February

1	Last Day to Register Motor Vehicles	Co. Tag Agent
1	Third Quarter 1945 Ad valorem Tax Due	Co. Treas.
10	Last Day to Pay January Withholding Tax paid to Depository	

ZEMMER
Prescribe or Dispense
Zemmer Pharmaceuticals
A complete line of laboratory controlled ethical pharmaceuticals. OK 1-46
Chemists to the Medical Profession for 44 years.
The Zemmer Company
Oakland Station
Pittsburgh 13, Pa.

Formulac

for adequate infant nutrition

FORMULAC, newly introduced on the market, is the trade name for a fortified infant food which makes supplementary vitamin administration unnecessary.

FORMULAC (a reduced milk in liquid form) was developed by E. V. McCollum. It is sufficiently supplemented with vitamins and minerals to render it an adequate food for babies. Incorporation of the vitamins *into the milk itself* eliminates the risk of maternal error or carelessness.

FORMULAC presents a flexible basis for formula preparation. Supplemented by carbohydrates at your discretion, it may readily be adjusted to fit each individual child's needs.

FORMULAC has been tested clinically, and found satisfactory in promoting infant growth and development.

FORMULAC is inexpensive—within price range of even low income groups. It is on sale at most grocery and drug stores.

FORMULAC IS PROMOTED ETHICALLY

For professional samples and further information about this new infant food, mail a card to National Dairy Products Company, Inc., 230 Park Avenue, New York 17, N. Y.

NATIONAL DAIRY Sealtest PRODUCTS CORP.

ACCEPTED AMERICAN MEDICAL ASS'N

NATIONAL DAIRY PRODUCTS COMPANY, INC.
NEW YORK, N.Y.

	Banks by the 10th of the month is applicable only to those employers whose withholding tax is in excess of $100.00 monthly.	Depository Bank
15	Last Day to File Return and Pay State Sales Tax for January, 1946.	Okla. Tax Com.
15	Last Day to File State Income Tax Information Return for 1945 (Form 500-501).	Okla. Tax Com.
15	Last Day to File Federal Income Tax Information Return for 1945 (Form 1906-1909). This applies to fixed or determinable income of $500.00 or more not reported on Withholding Receipt.	Col. of Int. Rev. Sorting Division, Washington, D. C.
20	Last Day to File Return and Pay State Motor Fuel Tax for January, 1946.	Okla. Tax Com.
20	Last Day to File Return and Pay State Use Tax for January, 1946.	Okla. Tax Com.
20	Last Day to File Return and Pay State Use Tax for January, 1946.	Okla. Tax Com.
20	Last Day to File Return and Pay State Special Fuel Use Tax for January, 1946.	Okla. Tax Com.
28	Last Day to File Return and Pay State Gross Production Tax for January, 1946.	Okla. Tax Com.
28	Last Day to File Return and Pay State Proration Excise Tax for January, 1946.	Okla. Tax Com.
28	Last Day to File Return and Pay Federal Excise and Miscellaneous Taxes for January, 1946.	Col. of Int. Rev.
28	Last Day to Pay Third Quarter 1945 Ad valorem Tax.	Co. Treas.

Urology Award

The American Urological Association offers an annual award 'not to exceed $500' for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years. All interested should write the Secretary, for full particulars.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Netherland Plaza, Cincinnati, Ohio, July 22-25, 1946.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before July 1, 1946.

WOMAN'S AUXILIARY

"Starving Amidst Plenty" was the topic of the November meeting of the Auxiliary to the Tulsa County Medical Society.

With good health an important factor in the nation's welfare and sufficient food necessary for good health, it is appalling to find that malnutrition is widespread in spite of the adequate supply of food available today. This can be eliminated to a great extent by learning facts of good nutrition.

Mrs. Carl Hotz, former president, and an experienced gardener, gave an interesting talk on Garden Soil in relation to food.

The luncheon demonstrated food values necessary to the buoyant health, strength and vitality needed for the busy lives we lead today.

The meeting on December 4th will be at Philbrook, where colored slides on flower arrangements will be shown through the courtesy of the Tulsa Garden Club. Mrs. N. M. Hulings will give a talk featuring Christmas Suggestions. Mrs. D. W. LeMaster will be in charge, assisted by members of the Flower Arrangement Committee of the Tulsa Garden Club.

Hostesses will be Mrs. J. W. Rogers, Mrs. Walter Larragee, Mrs. David Shapiro, Mrs. Allen Kramer and Mrs. E. W. Reynolds.

Members are allowed to bring a guest to this meeting.

Tulsa County News

Dr. and Mrs. C. G. Stuard have chosen the name of James Charles for their son, born November 15th at St. John's Hospital. Grandparents are Mr. and Mrs. James A. Taylor, Stillwater, and Mrs. C. G. Stuard, Sr., Waurika.

Dr. J. E. McDonald has been discharged from the army and is busy getting his office opened.

The family of Dr. Frank A. Stuart have returned to Tulsa and Dr. Stuart is expecting to be discharged from the army around the first of the year.

RADIUM
(Including Radium Applicators)
FOR ALL MEDICAL PURPOSES
Est. 1919
Quincy X-Ray and Radium Laboratories
(Owned and directed by a Physician-Radiologist)
HAROLD SWANBERG, B.S., M.D., Director
W.C.U. Bldg. Quincy, Illinois

THE WILLIE CLINIC AND HOSPITAL
A private hospital for the diagnosis, study and treatment of all types of neurological and psychiatric cases. Equipped to give all forms of recognized therapy, including hyperpyrexia, insulin and metrazol treatments, when indicated. Consultation by appointment.
JAMES A. WILLIE, B.A., M.D.
Attending Neuro-psychiatrist
218 N. W. 7th St.—Okla. City, Okla. Telephones: 2-6944 and 3-6071

In the City of Bagdad lived Hakeem, the Wise One, and many people went to him for counsel, which he gave freely to all, asking nothing in return.

There came to him a young man, who had spent much but got little, and said: "Tell me, Wise One, what shall I do to receive the most for that which I spend?"

Hakeem answered: "A thing that is bought or sold has no value unless it contains that which cannot be bought or sold. Look for the Priceless Ingredient."

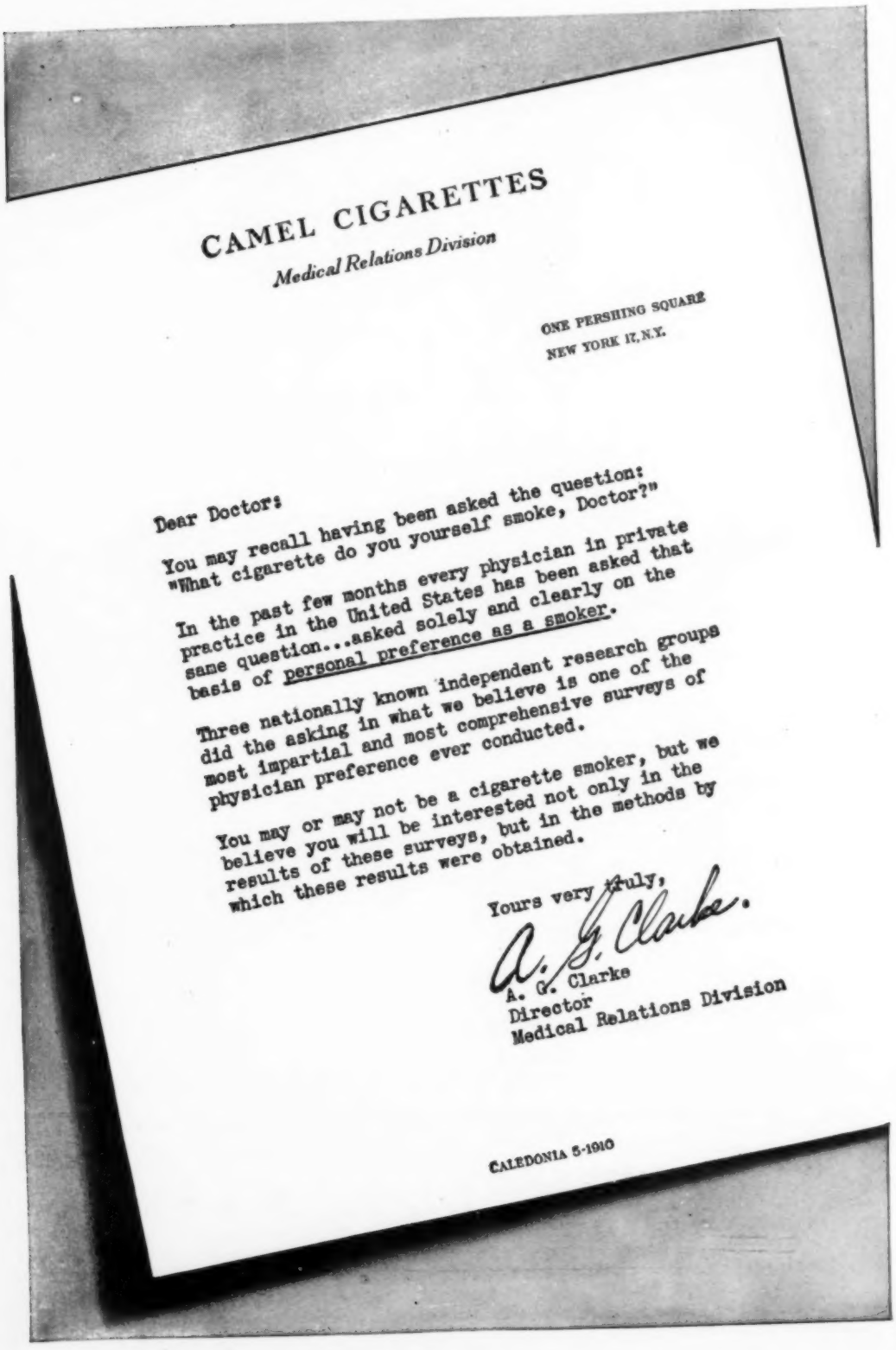
"But what is this Priceless Ingredient?" asked the young man.

Spoke then the Wise One: "My son, the Priceless Ingredient of every product in the marketplace is the Honor and Integrity of him who makes it. Consider his name before you buy."

Copyright, 1922, 1945, E. R. Squibb & Sons

E·R·SQUIBB & SONS

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858



CAMEL CIGARETTES

Medical Relations Division

ONE PERSHING SQUARE
NEW YORK 17, N.Y.

Dear Doctor:

You may recall having been asked the question: "What cigarette do you yourself smoke, Doctor?"

In the past few months every physician in private practice in the United States has been asked that same question...asked solely and clearly on the basis of personal preference as a smoker.

Three nationally known independent research groups did the asking in what we believe is one of the most impartial and most comprehensive surveys of physician preference ever conducted.

You may or may not be a cigarette smoker, but we believe you will be interested not only in the results of these surveys, but in the methods by which these results were obtained.

Yours very truly,

A. G. Clarke.

A. G. Clarke
Director
Medical Relations Division

CALEDONIA 5-1940

A physician asked us the question first—

A smoker himself, he asked: "What cigarette do most doctors smoke?"

We know that many physicians smoke, that many of them prefer Camels; but we couldn't answer the doctor's query.

We turned the question over to three nationally known independent survey groups. For months these three groups worked . . . separately . . . each one employing the latest scientific fact-finding methods.

This was no mere "feeling the pulse" poll. No mere study of "trends." This was a nationwide survey to discover the actual fact . . . and from the statements of physicians themselves.

To the best of our knowledge and belief, every physician in private practice in the United States was asked: "What cigarette do you smoke?"

The findings, based on the statements of thousands and thousands of physicians, were checked and re-checked.

ACCORDING TO THIS RECENT NATIONWIDE SURVEY:

More doctors smoke Camels than any other cigarette

And by a very convincing margin!

Naturally, as the makers of Camels, we are gratified to learn of this preference. We know that no one is more deserving of a few moments to himself than the busy physician . . . of a few moments of relaxation with a cigarette if he likes. And we are glad to know that so many more physicians find in Camels the same added smoking pleasure that has made Camels such an outstanding favorite among *all* smokers.

CAMELS *Costlier Tobaccos*

R. J. Reynolds Tob. Co.
Winston-Salem, N. C.

MEDICAL CORPS OFFICERS RELEASED FROM SERVICE

Adams, Felix ..... Vinita
Aisenstadt, E. A. ..... 66 Jannsen Place, Kansas City, Mo.
Akins, Jack O. ..... Medical Arts Building, Tulsa
Alexander, Robert L. ..... Okmulgee
Allgood, J. M. ..... 721 E. Cypress, Altus
Anderson, Paul S. ..... Walker Building, Claremore
Appleton, M. M. ..... 400 N. W. 10th, Okla. City
Baker, A. T. ..... 618 N. Fifth, Durant
Baker, Roscoe C. ..... 711 W. Oak Avenue, Enid
Ballantine, Henry T. ..... Muskogee
Barkett, N. F. V. ..... Medical Arts Bldg., Okla. City
Bartheld, Floyd ..... 114½ N. First, McAlester
Batchelor, John J. ..... Medical Arts Bldg., Okla. City
Battenfield, John Y. ..... Ellison Infirmary, Norman
Bednar, Gerald ..... Medical Arts Bldg., Okla. City
Bell, A. H. ..... 301 N. W. 12, Okla. City
Bennett, Henry G. ..... Medical Arts Bldg., Okla. City
Bigler, Earl E. ..... Claremore
Birge, Jackson P. ..... 724 N. E. 17, Okla. City
Blue, Johnny ..... Hales Building, Okla. City
Boatright, Lloyd C. ..... 1216 N. W. 36, Okla. City
Bolton, V. L. ..... Strong Mem. Hosp., Rochester, N. Y.
Boone, Wilmot B. ..... 2112 W. 41, Tulsa
Bond, Ira T. ..... 810½ Main, Duncan
Border, C. L. ..... Hightower Bldg., Okla. City
Bradley, Frank L. ..... Talihina
Brown, Gerster W. ..... Medical Arts Bldg., Okla. City
Brown, Spencer ..... Muskogee
Buchan, William H. ..... 1531 S. St. Louis, Tulsa
Buford, Elvin L. ..... Guymon
Buttermore, Ralph M. ..... 447 S. Pittsburg Ave., Tulsa
Campbell, Wm. J. ..... 301 N. W. 19, Okla. City
Carlock, John H. ..... Gilbert Building, Ardmore
Cheatwood, Wm. R. ..... Box 1139, Santa Fe, N. M.
Choice, R. W. ..... Wakita
Clark, John V. ..... 1706 S. E. 29, Okla. City
Coates, R. R. ..... Chickasha
Coker, B. B. ..... 145½ Main, Durant
Coley, Joe H. ..... Hightower Bldg., Okla. City
Cook, Edward T., Jr. ..... 503 W. Alabama, Anadarko
Cowart, O. Hiram ..... Bristow
Cox, Arlo K. ..... 1011 N. Noble, Watonga
Craig, Paul E. ..... Daniels Building, Tulsa
Cunningham, Donald ..... Ardmore
Curry, J. F. ..... Sapulpa
Curry, John R. ..... 952 Stuart Bldg., Lincoln, Neb.
Darnell, Elmer E. ..... Colony
Davidson, Wallace N. ..... Cushing
Davis, Thomas H. ..... Medical Arts Bldg., Tulsa
Davis, Wesley W. ..... Chickasha
Devanney, Louis ..... Sayre
Devanney, Phil J. ..... 113 N. Fourth, Sayre
Dew, H. A. ..... Marlow
Donovan, Mark ..... 1213 N. W. 38, Okla. City
Dorwart, F. G. ..... Muskogee
Doyle, Wm. H. ..... Third and Wall Streets, Muskogee
Dube, Paul H. ..... Lakewood, Ohio
Dunnington, Wm. G. ..... 305 S. Grand, Cherokee
Elkins, M. G., Jr. ..... 320 E. Wade, El Reno
Ellison, Gayfree ..... Clinton
Emenhiser, Lee K. ..... Medical Arts Bldg., Okla. City
Ensey, J. E. ..... Altus
Etter, Forest S. ..... Bartlesville
Evans, A. M. ..... Perry
Foerster, Hervey ..... Medical Arts Bldg., Okla. City
Fowler, Arthur ..... Sulphur
Fried, David N. ..... Jones
Gearhart, Elmer ..... Box 32, Kaw
Gibbens, Murray ..... Muskogee
Gibbs, Allen G. ..... 521 N.W. 11, Okla. City
Glasgow, J. G. ..... Bethany
Godfrey, James T. ..... Ardmore
Goen, Rayburn W. ..... 447 S. Pittsburg, Tulsa
Gordon, D. M. ..... 300 Masonic Bldg., Ponca City
Gordon, James M. ..... 1400 Bixby Bldg., Ardmore
Green, Charles E. ..... Lawton
Greenberger, Edward ..... McAlester
Hamm, Leslie T. ..... 319 Koehler Bldg., Lawton
Hazel, Onis G. ..... Medical Arts Bldg., Okla. City
Hemphill, Paul H. ..... Pawhuska
Henry, Millard ..... McAlester
Herrmann, Jess D. ..... 1147 N. W. 38, Okla. City
Hinshaw, J. R. ..... McAlester
Holcomb, Mark D. ..... 402 E. Summit, Lawton
Holcombe, R. N. ..... Muskogee
Hood, Frederick R. ..... Osler Building, Okla. City
Hood, James O. ..... 420 E. Keith, Norman
Howard, Walter Alonzo ..... Box 386, Chelsea
Hubbard, John Clarence ..... 1501 N. E. 11, Okla. City
Hubbard, John R. ..... 1501 N. E. 11, Okla. City
Hubbard, Ralph ..... 1501 N. E. 11, Okla. City
Hubbard, Wm. ..... 1501 N. E. 11, Okla. City
Hucherson, D. C. ..... 800 N. E. 13, Okla. City
Huff, T. J., Jr. ..... Walters
Huggins, James Richard ..... Medical Arts Bldg., Okla. City
Hughes, Horton E. ..... 14 E. 9, Shawnee
Ingle, John D. ..... 93rd & Euclid, Cleveland, Ohio
Ishmael, Wm. K. ..... 605 N. W. 10, Okla. City
Jacobs, Raymond G. ..... Enid
Johnston, L. A. S. ..... Holdenville
Jones, William A. ..... Elk City, Kansas
Kahn, Robert W. ..... 605 Euclid, Lawton
Kaiser, George L. ..... Manhattan Bldg., Muskogee
Kendall, Robert L. ..... 220 S. Morton, Okmulgee
Kern, Clyde V. ..... 1228 S. Florence, Tulsa
Kernek, Clyde ..... Holdenville
Kimball, George H. ..... Medical Arts Bldg., Okla. City
King, Everett J. ..... Duncan
Klotz, Wm. F. ..... 220 Comm-Little Bldg., Memphis, Tenn.
Knight, Claude B. ..... Wewoka
Lawson, Pat ..... Marietta
LeHew, Elton ..... Pawnee
Lemon, Cecil W. ..... Medical Arts Bldg., Okla. City
Levick, Julius E. ..... Elk City
Lindsey, Ray H. ..... Pauls Valley
Lingenfelter, Paul B. ..... Clinton
Little, Aaron C. ..... Minco
Lively, C. E. ..... McAlester
Livingston, L. G. ..... Cordell
Love, Albert J. ..... 11 Dewey, Sapulpa
Lowrey, R. W. ..... Atoka
Loy, Mm. A. ..... 215 Almeda Street, Norman
Lyons, Mason Russell ..... Carnegie
Mansur, Harl D. ..... Ardmore
Matthews, Newman S. ..... 400 N. W. 10, Okla. City
McClellan, C. W. ..... 305 Fifth Street, Claremore
McCollum, Wiley T. ..... Waynoka
McDonald, Glen W. ..... State Health Dept., Okla. City
McDonald, John E. ..... Natl. Mutual Bldg., Tulsa
Mercer, Wendell J. ..... Enid
Messinger, R. P. ..... 807 N. W. 23, Okla. City
Miles, John B. ..... Anadarko
Miller, J. E. ..... 1616 N. W. 33, Okla. City
Miller, Nesbit L. ..... Medical Arts Bldg., Okla. City
Mills, Charles K. ..... 602 E. Creek, McAlester
Mitchell, Joseph N. ..... Koehler Building, Lawton
Mohler, Eldon C. ..... Ponca City
Morey, John ..... 1314 S. Johnston, Ada
Morgan, Louis S. ..... 310 Community Bldg., Ponca City
Mulvey, Bert ..... Medical Arts Bldg., Okla. City
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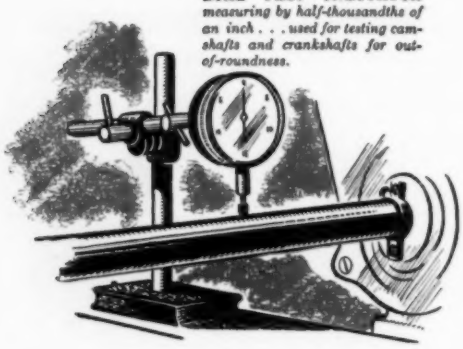

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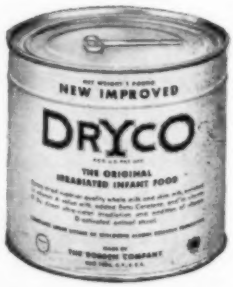

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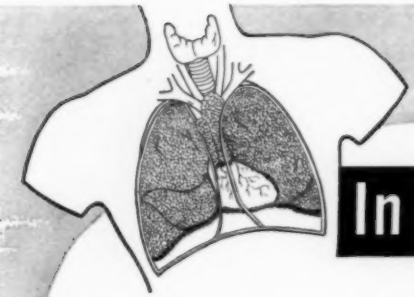

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*Stainsby, W. J.; Foss, H. L., and Drumheller, J. F.: Clinical Experiences with Penicillin, Pennsylvania M. J. 48:119 (Nov.) 1944.

McBryde, A.: Hemolytic Staphylococcus Pneumonia in Early Infancy; Response to Penicillin Therapy, Am. J. Dis. Child. 68:271 (Oct.) 1944.

Stainsby, W. J., Chairman, Commission for the Study of Pneumonia Control of the Medical Society of the State of Pennsylvania: Up-to-Date Facts on Pneumonia, Pennsylvania M. J. 48:266 (Dec.) 1944.

Larsen, N. P.: Observations with Penicillin, Hawaii M. J. 3:272 (July-Aug.) 1944.

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MEDICAL ABSTRACTS

THE GLUCOSE TOLERANCE TEST IN DIAGNOSIS OF DIABETES AND HYPERINSULINISM. Elmer L. Severinghaus, M.D., Department of Medicine, University of Wisconsin, Madison, Wisconsin.

In this the author calls attention to the four features, namely: 1. the initial level; 2. the peak of the curve; 3. the rate of decline; 4. the occurrence of a phase lower than the initial level sometimes in the third or fourth hours. These are used in connection with the diagnosis of not only diabetes, but other conditions.

The rate of decline is the most important factor in connection with diabetes, the slow rate being characteristic. Of course, if the initial rate is much above the upper limit of 120, these two factors are essentially all that is necessary in the diagnosis of diabetes. The only exception he mentions are chronic nephritis or a temporary emotional episode.

The peak has no particular significance in the diagnosis of diabetes, or hyperinsulinism. In cases where the initial blood sugar level was within normal limits, the occurrence of a distinctly high peak, that is, one above 180, it is usually associated with either thyrotoxicosis or some other factor disturbing the autonomic nervous system.

Those who two to four hours after the intake of glucose show blood sugar levels which are significantly lower than the initial level of the curve, are pointed out as being helpful in other conditions giving rise to hypoglycemia such as those rare types with an adenemo of the pancreas.

Important factors influencing the blood levels during the sugar tolerance test are recognized as being complex and worthy of consideration. Insulin hormone, from the anterior pituitary, the thyroid, adrenal cortex, and the adrenal medulla all tend to an elevation of the blood sugar level. However, the author indicates that an attempt to make diagnoses of pituitary thyroid adrenal or other endocrine disorders on the basis of the tolerance tests should not be considered satisfactory.

The paper was discussed by Dr. Seale Harris of Birmingham, Alabama, who stated that if the test is not extended to the fifth or sixth hour, a case of hypoglycemia may be overlooked. He also implied that a single tolerance test may not be sufficient for diagnosis. He says many cases of neurosis will show hypoglycemia if the six hour tolerance test is done.

Dr. Edward H. Rynearson of Rochester, Minnesota, made some pertinent remarks which implied that he had no great amount of confidence in the sugar tolerance test, particularly as it applies to hyperinsulinism.

Dr. Elliott P. Joslin of Boston, Massachusetts, implied in his discussion that he considered peak blood sugar as it goes up to high, very significant.

Dr. Samuel Soskin of Chicago, Illinois, was very frank with his discussion as follows: "Dr. Sevringhaus has confined his remarks to the oral form of the glucose tolerance test, and I agree with him and with Dr. Harris as to its clinical value or rather its lack of value. In outspoken cases of diabetes or of hyperinsulinism it is not needed for diagnosis. In borderline cases it is not a reliable diagnostic aid. As a matter of fact, anyone who has performed repeated oral dextrose tolerance tests on apparently normal individuals will agree that one can get about as much variation in the test in the same normal person at different times as Dr. Sevringhaus has shown in his slides of abnormal individuals. It is just as question of repeating the test often enough. I must say I find it rather surprising that members of a specialized society such as this still waste time and energy performing the oral test and still spend serious thought on its significance. As Dr. Hynearson has rightly said, it has caused many people to be labelled as diabetics who are not diabetic at all; and it has failed to pick up many potential or early diabetics." He says there is a better way of doing the test, namely, the intravenous administration of dextrose.

Dr. I. Arthur Mirsky, of Cincinnati, Ohio, has among other things said as follows: "The inaccuracies of the data obtained by means of the oral dextrose tolerance curve cannot be overemphasized. A recent experience may illustrate my point. In a patient with obstructive jaundice, a flat curve was obtained after the administration of sugar by mouth, while a normal curve was obtained when the sugar was given by vein. Obviously, the flat curve was due to faulty absorption. There is a great variability in rate of absorption of sugar from the intestinal tract from time to time which in turn may be responsible for variations in the character of the oral tolerance curve."

Dr. Otto Porges of Chicago, Ill., made this significant remark: "Dr. Sevringhaus mentioned that fasting before performing the glucose tolerance test has an influence on the blood sugar curve. I want to point out that not only fasting, but even the character of meal of the preceding evening has an effect. If that meal contained carbohydrates, there is a great difference in the blood sugar curve."

Dr. Herman O. Mosenthal of New York City said, "There is one point with which I absolutely agree, but I believe it should be confirmed, namely, that the height of the blood sugar curve is of no significance. I think it was McLane of England who first called such curves 'lag' curves. We found the same thing true, namely, that they did not signify diabetes. Lawrence of England at a meeting here once, accentuated that fact."

COMMENT: This is a very significant publication inasmuch as it is both presented and discussed by outstanding specialists on the subject and also at a meeting of specialists all of whom at the meeting seemed to concur with those who discussed the subject.

The fact remains that the glucose tolerance test is not a highly dependable clinical aid. Personally, I prefer repeated blood sugar's over a period of time both fasting and postprandial not only for the diagnosis of diabetes but for the diagnosis of associated conditions. Diagnosis is in these conditions much like that in many other conditions, in that observation, therapy and the influence of therapy and careful followup are more important than the initial tests.—H.J., M.D.

BRITTAIN ISCHIOFERMORAL ARTHRODESIS. Robert A. Knight and Michael M. Bluhm, Jr., Bone and Joint Surgery, Vol. 27, No. 4, October, 1945.

In 1941 Brittain described a method of arthrodesis of the hip, in which a large tibial graft is inserted into a cleft in the ischium, through an oblique osteotomy. The shaft of the femur is then displaced medially toward the ischium, supporting the graft and "short-circuiting" the diseased hip joint. This operation was done for tuberculosis of the hip and other diseases of the hip joint requiring arthrodesis.

The authors have used this operation since March, 1943 and in the present article reports the results of nine cases of tuberculosis of the hip, with a total of 12 hips operated upon, since three were cases of bilateral hip tuberculosis.

They find the method successful and more reliable than the extra-articular methods previously described. There is an oblique osteotomy performed across the upper third of the femur and the bone graft is driven into the ischium after making a hole for it with the osteotome. This graft is passed through the osteotomy wound into the ischium in a line upward and inward and parallel the neck of the femur. This permits an ankylosis to take place above the upper end of the distal

fragment, throwing the weight of the leg on the ischium below the head of the femur. This is more advantageous than where the arthrodesis is done above the head of the femur. The work is all extra-capsular. E.D.M., M.D.

RECURRENT DISLOCATION OF ANKLE DUE TO RUPTURE OF EXTERNAL LATERAL LIGAMENT. E. Hambly. British Medical Jr., Vol. 1, 413. 1945.

An operation for recurrent dislocation of the ankle due to rupture of the external lateral ligament is reported. The ligament is repaired by splitting the peroneus longus tendon from above downward. The detached end is threaded through the lateral malleolus and through the os calcis, and back again on itself. This reconstitutes the ligament.

A case report is given in which the operation was successful. The patient has had no further trouble. E.D.M., M.D.

INTERNAL FIXATION OF FRACTURES OF THE NECK OF THE FEMUR. Duncan W. Boucher. The Canadian Med. Ass'n. Jr., Vol. 50, No. 31. 1945.

The author reports the use of the three-flanged, centrally canalized nail, in the internal fixation of forth-seven fractures of the neck of the femur. Subcapital fracture occurred in 16.2 per cent, transcervical fracture in 41.8 per cent, and basilar fractures, either interfrochanteric or pertrochanteric, in 41.8 per cent. The ages ranged from 54 to 89 years, with most in the eighth decade. The fractures were more common in women than in men, 83.2 per cent, as compared with 16.7 per cent. Nineteen patients, or 40 per cent had complications on admission, which affected the end result.

Anesthesia was induced, in most cases, with nitrous oxide and oxygen; in some, with a spinal anesthetic; and in one, by local infiltration. Roentgenograms guided the procedure, before, during and after the operation. Extra-articular technique was followed in the introduction of the three-flanged nail, with the thigh in a position of abduction, hyperextension, and in internal rotation, and with the knee preferably fully extended. The guide wire was inserted well into the head of the femur, and the nail was threaded over the wire, and hammered home. Vigorous movements were then carried out by the surgeon to test the thoroughness of the operative procedure. Smooth movement, without recurring deformity, indicated solid impaction.

Patients were up on about the fourth day, and were bearing weight on the injured limb by the ninth week or sooner.

The end results were good in 72.3 per cent, fair in 8.3 and 10.6 per cent died. No nails were extracted, except in those patients who died while in the hospital, and in one case of absorption of the neck of the femur. —E.D.M., M.D.

A HIGH FLUID INTAKE IN THE MANAGEMENT OF EDEMA, ESPECIALLY CARDIAC EDEMA. CLINICAL OBSERVATIONS AND DATA. F. R. Schemm, M.D., F.A.C.P., Great Falls, Montana.

F. R. Schemm,—in a little over 8 years, treated 402 cases of edema with a regime of high fluid intake and low sodium intake. The theory behind his regime appears to be physiologically sound. In edema there is an increase of extracellular fluid while the cells themselves are actually dehydrated. The extracellular fluid is held by an increase in the concentration of the sodium ion. Forcing fluids causes an excretion of the excess sodium and salts in the extracellular spaces and a reduction in the amount of edema.

High fluid intake, sharp restriction of sodium in the diet, and a mild acid ash diet was in general the regime followed by Schemm. In many instances high fluid intake alone was used with success. In other instances it was necessary to restrict the sodium intake sharply to bring about a reduction in edema. The loss of edema was often so rapid that oppressive degrees of hydrothorax and ascites rarely required aspiration. So called "water intoxication" was not encountered although syndromes answering this description were seen which were found to be due to loss of body-fluid volume or disturbances of electrolyte pattern, or to "true" dehydration.

In 393 periods of observation or cases with gross edema, the edema cleared entirely in 94% or 369 instances. In 24 instances, or 6% the regime failed and the patient died unrelieved of edema. These were all cases of advanced disease with the uremic syndrome present in most and with the oral intake negligible because of vomiting or semi-stupor. Obviously in many of the 369 instances in which edema cleared completely, the result could be properly attributed, in whole or in part, to change in such factors, as the amount of rest, digitalis, oxygen, or diuretic drugs. But in 102 instances of treatment of gross edema, no change was made that might effect the clearing of edema except to institute the high fluid regime.

The high fluid intake regime was used in all cases of edema regardless of the etiological cause. The cases used included cardiac decompensation due to all types of cardiac disease, all types of renal disease, eclampsia, lynphoblastoma, pernicious anemia, diabetes mellitus, and myxedema.

SPINAL FLUID PROTEIN AND COLLODIOL MASTIC TESTS. E. A. Fennel, M.D., The Clinic, Honolulu, T. H.

E. A. Fennel reviewed the standard texts on the subject of spinal fluid protein and collodial mastic tests. In them he found considerable disagreement and confusion of thought on the subject.

He reviewed a number of his own cases in which total protein, albumin and globulin determinations, colloidal mastics, and Wassermanns were recorded. He found very little correlation between the amount of albumin and globulin (and their ratio) in the spinal fluid and the colloidal mastic. From his results he drew the following conclusions:

1. The only laboratory test that is diagnostic or pathognomonic of syphilis of the central nervous system is the properly applied complement fixation test. (Wassermann) or precipitation test (there are 57 varieties) for the detection of luetic "reagin" and the "syphilitic body". No other test serves this purpose.

2. The "colloidal curves", popularly called paretic, tabetic, and meningitic should be called prezone, midzone, and endzone since they do not indicate these three diseases and are quite non-specific.

3. These curves probably depend on the "protein pattern" of the spinal fluid and are equally usefur—or useless—in other diseases of the central nervous system, as in syphilis.

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4. The "protein pattern" involves a consideration of (a) the total protein concentration, (b) the albumin content, (c) the globulin content, (d) the ratio of globulin to albumin, and (e) the quality of the globulins.

5. The proper interpretation of the protein content of the spinal fluid needs much further physiologic and clinical study.

6. Practical (i.e., cheap in time, money, and spinal fluid, though accurate) chemical methods for determining the protein content and partitioning of albumins and globulins are not yet ready to supplant the colloidal tests on spinal fluids since the colloidal tests depend not wholly on the quantitative protein values but also on the *qualitative* one.

7. There is little, if any, correlation between the quantitative "protein pattern" of the spinal fluid and its content of reagin.

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Blaine			
Bryan			Second Tuesday
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Canadian			Subject to call
Carter	J. Hobson Veazey, Ardmore	H. A. Higgins, Ardmore	Second Tuesday
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Choctaw	Floyd L. Waters, Hugo	O. R. Gregg, Hugo	
Cleveland			Thursday nights
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Custer	Ross Deputy, Clinton	A. W. Paulson, Clinton	Third Thursday
Garfield	Bruce Hinson, Enid	John R. Walker, Enid	Fourth Thursday
Garvin	M. E. Robberson, Jr., Wynnewood	John R. Callaway, Pauls Valley	Wednesday before Third Thursday
Grady			Third Thursday
Grant			
Greer	J. B. Lansden, Granite	J. B. Hollis, Mangum	
Harmon	W. G. Husband, Hollis	R. H. Lynch, Hollis	First Wednesday
Haskell			
Hughes			First Friday
Jackson	E. M. Mabry, Altus	J. P. Irby, Altus	Last Monday
Jefferson	F. M. Edwards, Ringling	J. A. Dillard, Waurika	Second Monday
Kay			Second Thursday
Kingfisher			
Kiowa			
LeFlore			
Lincoln	J. S. Rollins, Prague	Ned Burleson, Prague	First Wednesday
Logan	James Petty, Guthrie	J. E. Souter, Guthrie	Last Tuesday
Marshall			
Mayes			
McClain			
McCurtain			Fourth Tuesday
McIntosh	Dr. F. R. First, Checotah	W. A. Tolleson, Eufaula	First Thursday
Muskogee-Sequoyah			
Wagoner	R. N. Holcombe, Muskogee	William N. Weaver, Muskogee	First Tuesday
Noble			
Okfuskee			Second Monday
Oklahoma			Fourth Tuesday
Okmulgee	F. S. Watson, Okmulgee	C. E. Smith, Okmulge	Second Monday
Osage			Third Monday
Ottawa	C. F. Walker, Grove	W. Jackson Sayles, Miami	Second Thursday
Pawnee			
Payne			Third Thursday
Pittsburg			Third Friday
Pontotoc-Murray			First Wednesday
Pottawatomie	F. P. Newlin, Shawnee	Clinton Gallaher, Shawnee	First and Third Saturday
Pushmataha			
Rogers	W. A. Howard, Chelsea	P. S. Anderson, Claremore	Third Wednesday
Seminole			Third Wednesday
Stephens			
Texas	Daniel S. Lee, Guymon	E. L. Buford, Guymon	
Tillman			
Tulsa	John C. Perry, Tulsa	John E. McDonald, Tulsa	Second and Fourth Monday
Washington-Nowata	Ralph W. Rucker, Bartlesville	L. B. Word, Bartlesville	Second Wednesday
Washita	L. G. Livingston, Cordell	Roy W. Anderson, Clinton	
Woods			Last Tuesday Odd Months
Woodward	T. C. Leachman, Woodward	C. W. Tedrowe, Woodward	Second Thursday

*(Serving in Armed Forces)